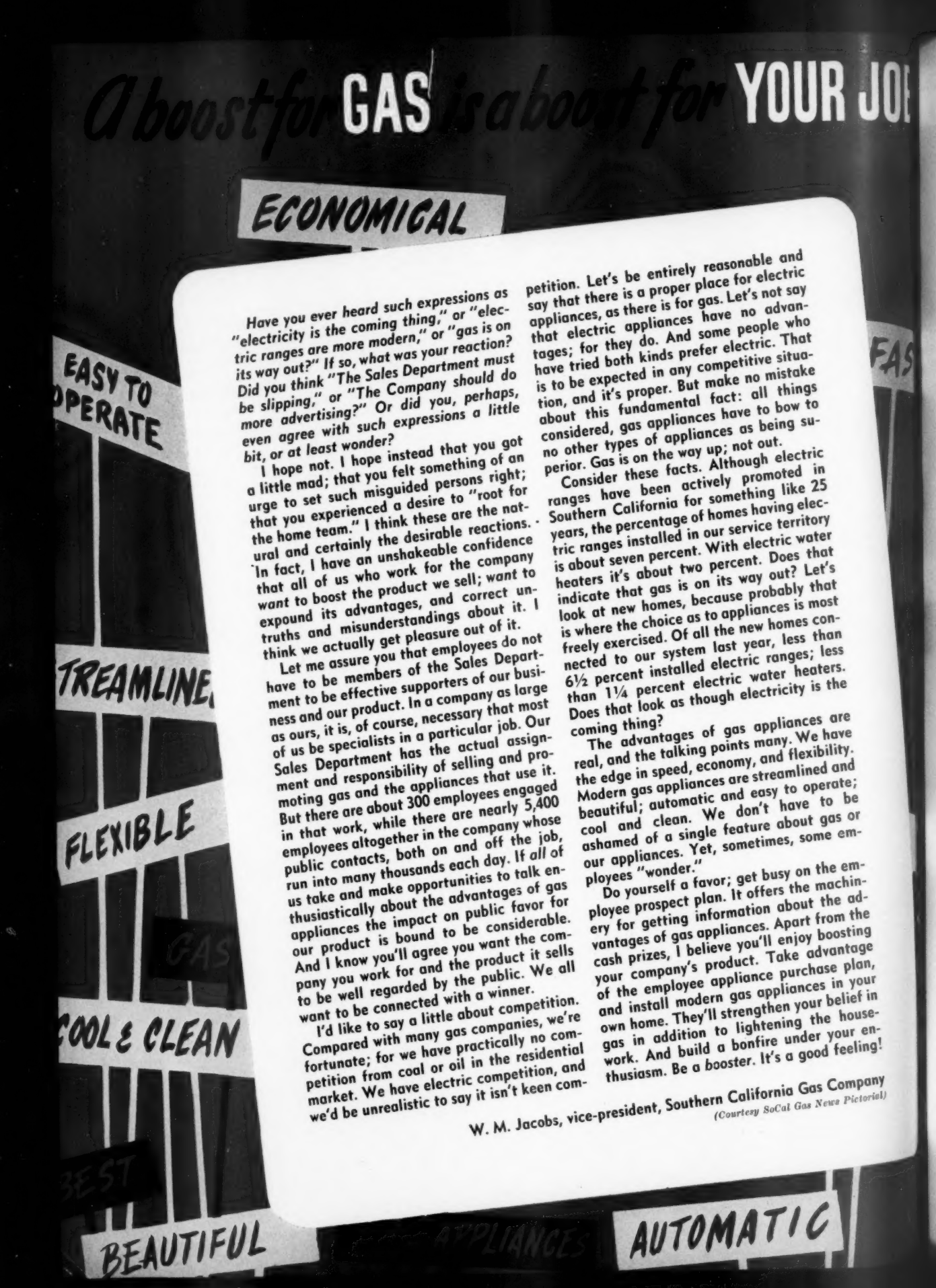
AMERICAN GAS ASSOCIATION

Monthly

-AUGUST
1951



Have you ever heard such expressions as "electricity is the coming thing," or "electric ranges are more modern," or "gas is on its way out?" If so, what was your reaction? Did you think "The Sales Department must be slipping," or "The Company should do more advertising?" Or did you, perhaps, even agree with such expressions a little bit, or at least wonder?

I hope not. I hope instead that you got a little mad; that you felt something of an urge to set such misguided persons right; that you experienced a desire to "root for the home team." I think these are the natural and certainly the desirable reactions. In fact, I have an unshakeable confidence that all of us who work for the company want to boost the product we sell; want to expound its advantages, and correct untruths and misunderstandings about it. I think we actually get pleasure out of it.

Let me assure you that employees do not have to be members of the Sales Department to be effective supporters of our business and our product. In a company as large as ours, it is, of course, necessary that most of us be specialists in a particular job. Our Sales Department has the actual assignment and responsibility of selling and promoting gas and the appliances that use it. But there are about 300 employees engaged in that work, while there are nearly 5,400 employees altogether in the company whose public contacts, both on and off the job, run into many thousands each day. If *all* of us take and make opportunities to talk enthusiastically about the advantages of gas appliances the impact on public favor for our product is bound to be considerable. And I know you'll agree you want the company you work for and the product it sells to be well regarded by the public. We all want to be connected with a winner.

I'd like to say a little about competition. Compared with many gas companies, we're fortunate; for we have practically no competition from coal or oil in the residential market. We have electric competition, and we'd be unrealistic to say it isn't keen competition. Let's be entirely reasonable and say that there is a proper place for electric appliances, as there is for gas. Let's not say that electric appliances have no advantages; for they do. And some people who have tried both kinds prefer electric. That is to be expected in any competitive situation, and it's proper. But make no mistake about this fundamental fact: all things considered, gas appliances have to bow to no other types of appliances as being superior. Gas is on the way up; not out.

Consider these facts. Although electric ranges have been actively promoted in Southern California for something like 25 years, the percentage of homes having electric ranges installed in our service territory is about seven percent. With electric water heaters it's about two percent. Does that indicate that gas is on its way out? Let's look at new homes, because probably that is where the choice as to appliances is most freely exercised. Of all the new homes connected to our system last year, less than 6½ percent installed electric ranges; less than 1¼ percent electric water heaters. Does that look as though electricity is the coming thing?

The advantages of gas appliances are real, and the talking points many. We have the edge in speed, economy, and flexibility. Modern gas appliances are streamlined and beautiful; automatic and easy to operate; cool and clean. We don't have to be ashamed of a single feature about gas or our appliances. Yet, sometimes, some employees "wonder."

Do yourself a favor; get busy on the employee prospect plan. It offers the machinery for getting information about the advantages of gas appliances. Apart from the cash prizes, I believe you'll enjoy boosting your company's product. Take advantage of the employee appliance purchase plan, and install modern gas appliances in your own home. They'll strengthen your belief in gas in addition to lightening the housework. And build a bonfire under your enthusiasm. Be a booster. It's a good feeling!

W. M. Jacobs, vice-president, Southern California Gas Company

(Courtesy SoCal Gas News Pictorial)

THIS MONTH'S COVER: Chuck wagon chuckles are enjoyed by Red Skelton and Esther Williams. See page 21 for story of Miss Williams' tie-in with Old Stove Round Up

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WHY has much of the gas industry's research fallen on barren ground? One reason, states George F. Mitchell, is that manufacturers and gas companies both hesitate to push the bold and new. Another reason, according to Edward J. Nelson, chairman of the A. G. A. Domestic Research and Utilization Conference, is a lack of full cooperation between utilities and manufacturers. Each should encourage the other; each is mutually dependent upon the other to develop the finest gas utilization equipment possible. . . . The time has come for all of us to work as a team. Either we heed Mr. Nelson's warning and marshall our energies and resources to go forward, or we slowly pass into oblivion. . . . One sure road to disaster is to let our sales forces fade away. The road to progress, on the other hand, is indicated by such cooperative efforts as the PAR Plan field tests of automatic ignition devices for gas ranges. Another shining example is the joint conference on changeover economics sponsored by A. G. A. and NEGA groups. . . . The PAR Plan has given us the arms to win the knockdown, drag-out fight with competition. The question is: Are we going to use them?

JAMES M. BEALL
DIRECTOR, PUBLIC INFORMATION

JAC A. CUSHMAN
EDITOR

RICHARD F. MULLIGAN
ART SUPERVISOR

EDITORIAL OFFICES:
AMERICAN GAS ASSOCIATION
420 LEXINGTON AVE., NEW YORK 17, N.Y.

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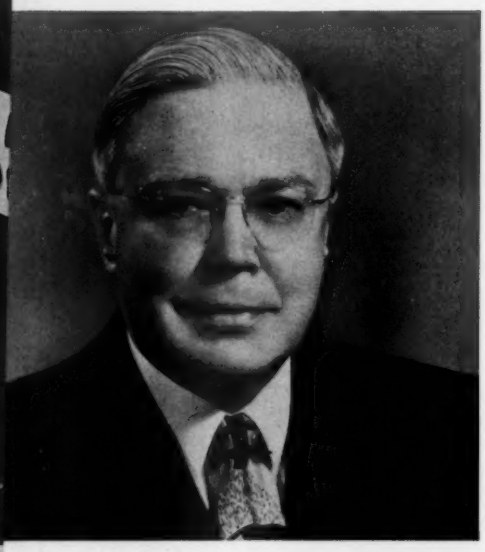
For vice-presidents ▶

CHARLES E. BENNETT

For directors

B. C. ADAMS

For president

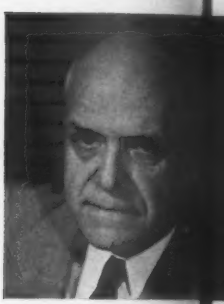


GEORGE F. MITCHELL

EARL H. EACKER

R. M. HESKETT

EDWARD F. BARRETT



LOUIS RUTHENBURG

For treasurer ▶

A. G. A. nominates for 1951-1952

M. A. ABERNATHY

L. L. BAXTER

RALPH L. FLETCHER

J. A. FRY

E. G. LAWSON

J. F. MERRIAM

DEAN H. MITCHELL

J FRENCH ROBINSON

EARL SMITH

PAUL R. TAYLOR

THOMAS WEIR

J. THEODORE WOLFE

Thirty-one prominent gas industry executives from 19 states and Canada have been nominated for top positions in American Gas Association. The list includes representatives of manufactured, natural and mixed gas companies, as well as those of manufacturer and holding companies.

The complete slate of nominations for officers, directors and Section officers will be voted upon by the membership at the 1951 A. G. A. Convention in St. Louis, Mo., October 15-17.

Report of the A. G. A. General Nominating Committee, which was elected at the 1950 Convention last October, is announced at this time in accordance with provisions of the A. G. A. by-laws. However, any 50 company members can place additional nominations in the hands of the Association's managing director by August 15, 1951.

Recommendations for election of a president, two vice-presidents and a treasurer to serve for one year have been submitted by the General Nominating Committee of which Hudson W. Reed, president, The Philadelphia Gas Works Co., is chairman. Serving on the committee with Mr. Reed are the following officials: C. H. Gueffroy, president, Portland Gas & Coke Co., Portland, Ore.; George S. Hawley, president, The Bridgeport Gas Light Co., Bridgeport, Conn.; Earl C. Overbeck, chairman of the board, The Ohio Fuel Gas Co., Columbus, Ohio; J. A. Robertshaw, president, Robertshaw-Fulton Controls Co., Greensburgh, Pa., and Gardiner Symonds, president Tennessee Gas Transmission Co., Houston, Texas.

In addition to the slate of officers, 15 gas industry officials have been nominated to serve as directors of A. G. A. for a two-year term. Mr. Reed's general committee has also submitted the recommendations of nominating committees of five A. G. A. Sections and two general committees. If elected at the October Convention, the nominees for chairman of these Sections and committees automatically will become Sectional vice-presidents of the Association. Four other gas officials have

For chairmen

RALPH F. McGLONE
Accounting Section

RONALD A. MALONY
Industrial and
Commercial Gas Section

ARTHUR F. BRIDGE
Laboratories
Managing Committee

GORDON LEFEBVRE
Manufacturers' Section

H. BRUCE ANDERSEN
Operating Section

C. J. ALLEN
Publicity and
Advertising Committee

WILLIAM J. SCHMIDT
Residential Gas Section

For vice-chairmen

BERNARD S. RODEY, JR.
Accounting Section

TERRY HART
Industrial and
Commercial Gas Section

CHARLES E. BENNETT
Laboratories
Managing Committee

CHANNING W. WILSON
Operating Section

RAYMOND J.
VANDAGRIFF
Residential Gas Section

been nominated as vice-chairmen of these Sections and general committees.

The following list of nominations is brought to the attention of the A. G. A. membership:

For president—GEORGE F. MITCHELL, president, The Peoples Gas Light & Coke Co., Chicago, Illinois

For first vice-president—CHARLES E. BENNETT, president, The Manufacturers Light & Heat Co., Pittsburgh, Pennsylvania

For second vice-president—EARL H. EACKER, president, Boston Consolidated Gas Co., Boston, Massachusetts

For treasurer—EDWARD F. BARRETT,* president, Long Island Lighting Co., Mineola, New York

For director—two-year term expiring October 1953

B. C. ADAMS,* president, The Gas Service Co., Kansas City, Missouri

M. A. ABERNATHY, vice-president, United Gas Pipe Line Co., Shreveport, Louisiana

L. L. BAXTER, president, Arkansas Western Gas Co., Fayetteville, Arkansas

J. THEODORE WOLFE, executive vice-president, Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore, Maryland

RALPH L. FLETCHER, president, Providence Gas Co., Providence, Rhode Island

J. A. FRY, president, Detroit-Michigan Stove Co., Detroit, Michigan

R. M. HESKETT, president, Montana-Dakota Utilities Co., Minneapolis, Minnesota

E. G. LAWSON, president, Pacific Public Service Co., San Francisco, California

J. F. MERRIAM,* president, Northern Natural Gas Co., Omaha, Nebraska

DEAN H. MITCHELL,* president, Northern Indiana Public Service Co., Hammond, Indiana

J FRENCH ROBINSON,* president, Consolidated Natural Gas Co., New York, New York

LOUIS RUTHENBURG, chairman of board, Servel, Inc., Evansville, Indiana

EARL SMITH, president, South Jersey Gas Co., Atlantic City, New Jersey

PAUL R. TAYLOR,* vice-president, Stone & Webster Service Corp., New York, New York

THOMAS WEIR,* vice-president and general manager, Union Gas Co. of Canada, Ltd., Ontario, Canada

ACCOUNTING SECTION

For chairman

RALPH F. MCGLONE, Cleveland commercial manager, The East Ohio Gas Co., Cleveland, Ohio

For vice-chairman

BERNARD S. RODEY, JR., assistant secretary, Consolidated Edison Co. of New York, Inc., New York, New York

INDUSTRIAL AND COMMERCIAL GAS SECTION

For chairman

RONALD A. MALONY, executive vice-president, The Bridgeport Gas Light Co., Bridgeport, Connecticut

For vice-chairman

TERRY HART, general sales manager, Nashville Gas & Heating Co., Nashville, Tennessee

(Continued on page 50)

Cooperative action is essential to meet competition and cement industry's recent gains

Partners—utility & manufacturer

By GEORGE F. MITCHELL

President, The Peoples Gas Light & Coke Co., and Vice-President, American Gas Association

The gas industry has been on a steady, upward incline since World War II, culminating in new records in 1950 for sales, revenues, number of customers, capital investment and merchandising volume. Gains by the gas utilities last year of 3.3 percent in customers, 15.8 percent in sales, 16 percent in revenues, and 14 percent in expenditures for new facilities maintained this industry as the sixth largest in the United States with a capital investment of 8¾ billion dollars. At the end of the year the industry was serving, through its mains, 24½ million customers with 4¼ trillion cubic feet of gas, for which it collected about 2 billion dollars. At the same time manufacturers were setting new records with gains of 50 percent in gas range sales and 66 2/3 percent in automatic gas water heaters to set new highs of 3 1/10 and 2¼ million units respectively. The advance of natural gas pipe lines into many new nooks and corners and their projected extension into practically every section of the land gives the gas business a glamor unequaled by any other industry and, coupled with the growth enumerated above, would seem to project it into a new spot on easy street. But wait, let's give another look at this spot and see where the industry really is.

Coincident with the growth of the industry, there have been developing new problems. More important, new alignments and new delineations have come into play. Problems generally can be solved by enlightened adherence to basic principles, but alignments and delineations must be studied carefully and appraised for their trends and significance. A few years ago, neither the gas utility nor the gas manufacturing industry bore a very strong resemblance to their counterparts of today. There were sporadic endeavors of gas companies to manufacture their own appliances. Not so long ago a majority of gas appliances were sold by the utilities, causing a very close relationship between manufacturer and utility. It is not so many years that manufacturers have felt the urge to emphasize modernity and other factors which have closed the door to the old cast iron, coal-stove-looking-gas-stove and have emphasized design, efficiency and automatic operation. One relic of the old days, unfortunately, seems to hang on to too great a degree. That is a tendency on the part of gas utilities to buy everything on price instead of giving encouragement to manufacturers who emphasize service, performance, advanced design and customer appeal, and who provide their fair share of promotional effort to gas, the ideal fuel. Even this relic promises to pass into oblivion.

George F. Mitchell warns utilities against selling down to a price, to the detriment of quality selling by appliance makers

There have come into existence new relationships between utility and manufacturer, with all their ramifications as to dealers, distributors, regulatory and legislative authorities, and even touching their respective trade associations. Hence it is important that each of them reappraise the situation from time to time and make sure that their combined efforts are properly directed to attain maximum potentialities. When Messrs. Hobson and Cuthrell, the presidents of GAMA and of A.G.A. last year, initiated informal meetings of the top officers of those two Associations for this very exploratory purpose, it was definitely a step in the right direction. These meetings will grow in importance and will serve to maintain a healthy area of understanding.

Another great forward step was taken in the holding of the Executive Sales Conference in Chicago last September. There, for the first time, presidents and sales managers of utilities and manufacturers came together in a spirit of helpfulness to discuss the problems of, and road-blocks to, increased sales.

The gas industry will maintain its ascendance in records as made in the past only if it girds its loins and steps out aggressively to meet its competition. Perhaps the first pressing problem is the development and production of

Abridged version of talk before GAMA annual meeting, Chicago, April 17, 1951.

improved gas appliances.

Under the PAR Plan, gas utilities during the past 6½ years have spent 1¼ million dollars in domestic, commercial and industrial gas research. Some important discoveries have been made, new facts disclosed, and new leads uncovered. But these have made little penetration into appliances. Manufacturers, too few in number perhaps, have spent millions of dollars on applied research and development work, but much of it is still under wraps. One finds all too seldom bold, revolutionary appliances using new principles, new materials, new methods developed through these research and development programs. Possibly this is due to a lack of complete understanding and cooperation between manufacturer and utility.

The A.G.A. Laboratories were established 25 years ago when appliance manufacturers were members of A.G.A. and before GAMA was organized. In my judgment, the Laboratories have served manufacturers, utilities, and the public, very well indeed. Of course, the utilities and the manufacturers have gripes from time to time about the specifications or standards as determined by the Approval Requirements Committees. Someone said: "There are three sides to every controversy—your side, my side, and the right side."

Look ahead

● Someone at the president's meeting of a big appliance company said, "Well, no matter what happens, we can always count on getting our historic share of the available business."

That made the president mad . . . as mad as a good president ever allows himself to get at a meeting.

" 'Historic share', hell!" he said. "If the man who started this business had had that idea, he'd never have started it at all. We intend to get a lot more than our share of the business."

Pat phrases like "our historic share" always represent a dangerous state of mind. A statistician can tell you exactly what your share of the market can be, on the basis of your records, but that's another case of looking at where you have been and not at where you are going.

Raymond Rodgers, professor of banking at New York University, speaking before an economic meeting for the Peoples First National Bank & Trust Company, said:

"There will be as much business, or more . . . but a different crowd may be doing it."

—*Ketchum, MacLeod & Grove, Inc.*

When the committees get through discussing these various gripes, the result produced is better for all of us, including the public, because these discussions took place and resulted in mutual understanding.

Were it not for these Laboratories, both manufacturers and utilities would now be suffering from specifications and standards established by many local, state and governmental authorities. The public would suffer because it gets better appliances as a result of our specifications and standards than it would get if they were written by public authorities.

Push bold and new

The public is always shopping. Some people think it is looking only for price; nothing can be further from the truth. If it were true, the big automobile manufacturers would make only the lowest-priced cars they could make. They all make high-priced cars to satisfy that portion of the market which is willing to pay almost any price for performance, style and safety. Producing such high-priced cars enables them to up-grade the cheapest cars by the application of the experience gained in building the higher-priced cars, the net result of which is better performance, style and safety in the lower-priced cars with a corresponding benefit in maintaining a lower price for the high-class product.

But gas utilities hesitate to push the bold and new. Naturally appliance manufacturers hesitate to produce it. Hence, these manufacturers hesitate to adopt research discoveries or to undertake research and development of their own. This results in a less than perfect appliance, less than all-out sales effort, less than a fully satisfied customer, and another opportunity for our competitors. Break this vicious circle and there will be, without doubt, a veritable flood of new devices and appliances, new outlets for gas, new profits for both utility and manufacturer, stemming from a wealth of new ideas nurtured by research and development work done respectively by both of them.

Having made that bold new device—or even having only improved slightly an existing one—the market place must be provided for its sale. This suggests a cold look at the appliance distribution situation and at promotion, advertising and selling plans.

Distribution of his appliances is, of course, a manufacturer's own business. The problem should be worked out by utilizing the advice and assistance of, but shunning too much interference from, the utilities. The ultimate user will be better served if a utility in a given area is not a distributor of the manufacturer's product in the area. Any distributor should make a profit from his transactions, but no utility should scalp a profit from the dealers in its territory. Manufacturers and utilities need the maximum amount of help available from the dealers. We in the Peoples Company believe that utilities should be dealers in gas consuming appliances. We believe that our duty is to supply good gas appliances just as we believe in rendering good gas service. We think our policy of selling only good appliances is beneficial to the dealers in our community, and we are of the opinion that they think so, too, because of the help we give them through our dealer cooperation organization.

It would be highly beneficial if manufacturers of different appliances would pool their efforts in order to get distributors and dealers in position to sell an entire line of gas appliances. The choosing of capable, progressive appliance distributors, therefore, is a job of number-one importance.

Hand in hand with this problem is that of selecting capable, aggressive dealers. There is a variety of opinion among utilities on the importance of the dealer and his place in the scheme of things. Much of the present dampened sales effort can be attributed directly to the lack of a clear-cut policy by both utilities and manufacturers on the dealer situation. After the War, a large number of utilities dropped their selling efforts, hoping the dealers would take over the job; but neither the manufacturers nor the utilities had prepared for this move, nor had the utilities adequately cultivated the ground from which satisfactory dealer sales could spring.

One of the outstanding problems facing the gas industry today is to awaken top management of both gas utilities and gas appliance manufacturers to the pressing need for greater sales effort. In some quarters there is already a tendency, because of the spectre of uncertain world *(Continued on page 54)*

First conference of A.G.A. Economics Committee and NEGA managers shows economics as workaday tool

Economics of changeover mapped

E. W. Morehouse (right), chairman of the A. G. A. Committee on Economics, and general chairman of the New England regional conference on economics, with committee members who headed four panel discussions: (left to right) L. C. Peters, St. Louis, Mo.; R. E. Ginna, Rochester, N. Y.; F. B. Jones, Pittsburgh, Pa.; G. C. Griswold, Brooklyn, N. Y.

Economic considerations arising from a shift from manufactured to natural gas, now imminent in the New England area, were studied at a regional conference on May 17 in the Bay State Room of Boston's Hotel Statler. The all-day session was a joint undertaking of the American Gas Association's Committee on Economics and the Company Managers Conference of the New England Gas Association. In the view of some of the audience, the session could well have been extended into a two-day meeting. Over one-hundred company managers and executives from New England gas utilities, as well as representatives from gas companies in several neighboring states, were in attendance.

Emphasis during previous natural gas conferences in New England has been predominantly on operating, technical conversion, personnel and customer relations matters. This conference, the first concerned with some major economic aspects of natural gas changeover, gave particular emphasis to load growth possibilities and their concomitant financial effects, appropriate pricing policies to encourage sound and balanced load growth. Stress was placed upon the need for greater knowledge of customer appliance and consumption patterns to expand physical facilities in order to serve adequately the augmented potential demand at the lowest possible cost.

In the words of the meeting's general chairman, E. W. Morehouse, vice-president, General Public Utilities Corp., New York, "The problems involving househeating and the introduction of natural gas are intertwined. That is because introducing natural gas stimulates load growth, emphasizes the need for market surveys to guide selective sales effort and for load studies to guide system planning, and requires a revolution in our thinking about pricing gas service, particularly in a period of inflation like the present."

Each of the four panels had as its chairman a member of the Economics Committee who in turn had invited gas company executives to serve as panel members. Some of these men were conversant with recent conversion problems, while the others were able to talk of many years' experience with mixed and natural gas operations.

The panel devoted to consideration of "Load Growth Following Introduction of Natural Gas," had L. C. Peters, vice-president, Laclede Gas Co., St. Louis, Mo., as its chairman. Members of the panel were J. T. Wolfe, executive vice-president, Consolidated Gas Electric Light & Power Company of Baltimore; J. R. Gardner, assistant secretary and assistant treasurer, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y., and R. L. Manier, industrial heat engineer, Niagara Mohawk Power Corp., Syracuse, N. Y.

Chairman of the panel on "Market Surveys as a Basis for Selecting Natural Gas Loads" was F. B. Jones, manager, economic and management research, Equitable Gas Co., Pittsburgh. Members of the panel were Henry Tuttle, executive

LOAD GROWTH FOLLOWING THE INTRODUCTION OF NATURAL GAS: (L. to r.) R. L. Manier, Niagara Mohawk Power Corp.; J. T. Wolfe, Consolidated Gas Electric Light & Power Co.; L. C. Peters, Laclede Gas Co., chairman; J. R. Gardner, Central Hudson Gas & Electric Corp.

GAS LOADS STUDIES AND THEIR SIGNIFICANCE IN NATURAL GAS PLANNING: (Left to right) Hall M. Henry, NEGEA Service Corp.; G. C. Griswold, The Brooklyn Union Gas Co., chairman; Constantine Bary, Philadelphia Electric Co.; Robb Quinby, The Brooklyn Union Gas Co.

ECONOMICS OF PRICING AFTER INTRODUCTION OF NATURAL GAS: (L. to r.) W. S. Potter, Elizabethtown Consolidated Gas Co.; R. E. Ginna, Rochester Gas & Electric Corp., chairman; G. F. Mitchell, The Peoples Gas Light & Coke Co.; C. M. Turner, The Cincinnati Gas & Electric Co.

MARKET SURVEYS AS A BASIS FOR SELECTING NATURAL GAS LOADS, was the subject discussed by this panel of industry experts: (Left to right) C. H. Frazier, The Philadelphia Gas Works Co.; F. B. Jones, Equitable Gas Co., chairman; Henry Tuttle, Michigan Consolidated Gas Co.

vice-president, Michigan Consolidated Gas Co., Detroit, and C. H. Frazier, assistant to the president, The Philadelphia Gas Works Company.

G. C. Griswold, manager, economic research department, The Brooklyn Union Gas Co., was chairman of the panel on "Gas Loads Studies and Their Significance in Natural Gas Planning." Panel members were Hall M. Henry, vice-president, NEGEA Service Corp., Cambridge, Mass.; Robb Quinby, manager, rate department, The Brooklyn Union Gas Co., and Constantine Bary, rate research engineering, Philadelphia Electric Company.

"Economics of Pricing after Introduction of Natural Gas" was the subject of the panel headed by R. E. Ginna, executive vice-president, Rochester Gas & Electric Corporation. Members of the panel were G. F. Mitchell, president, The Peoples Gas Light & Coke Co., Chicago; W. S. Potter, president, Elizabethtown Consolidated Gas Co., Elizabeth, N. J., and C. M. Turner, vice-president, The Cincinnati Gas & Electric Company.

The singularly important problem of the prospective gas house heating load was stressed throughout the session. Speakers from the older natural and mixed gas companies cited the acute situation confronting their companies as a result of the disparity in prices of gas and competitive heating fuels. It was pointed out that this disruption in the basic "law" of supply and demand was brought about by the regulatory requirement of selling gas on the basis of the regulatory accounting precepts of original cost and "return-on-rate-base." At the same time, the principal competitors, coal and oil, are being priced on the basis of what the market will bring. The normal operation of consumer choices, based on freely determined market prices, has been supplanted in many localities by long application lists for gas househeating. In these instances, there is no foreseeable prospect that the entire demand can be satisfied under the prevailing comparative price levels and commission-supervised service restriction orders.

The story was virtually the same—only the exact figures differed—for each of these old-time mixed and natural gas companies represented at the session. Within one year after relaxing previously existing restrictions in 1949, one such company almost doubled its house-heating saturation. Another of these companies reported that its postwar rate of acquiring gas househeating installations, despite some restrictions, was nearly 15 times the 1940-1945 rate. By 1950 it had five times the househeating saturation which prevailed in 1945, and it could within a short time double the present saturation if it were not for prevailing selective restrictions. The reason for this movement is easily understood when one recalls that in one typical mid-western city the price of domestic coal increased 102 percent, oil 95 percent and gas for heating only 13 percent during

the last decade. As a result, competitive fuels are at present about 50 percent more expensive than natural gas.

The speakers whose companies had converted within the last few years, referred to the way in which the introduction of natural gas fires the popular imagination for gas space heating. Despite the fact that present-day city gate gas costs have been increasing and despite conscious managerial efforts to design post-conversion househeating rates at more nearly competitive fuel prices, they had experienced very sizeable increases in their househeating installations. In several cases these increases occurred after relatively small rate reductions following the introduction of natural gas—and despite continued consumers' costs of gas heating above those of coal or oil. In many instances these increases considerably exceeded management's expectations.

It was generally conceded that consumers are willing to pay a premium for gas heating, but the question was raised concerning the magnitude of the tolerable premium. There appeared to be no single answer applicable to all localities and under all business conditions. With the current high level of consumer incomes in the country, low rates are not so vital to promote certain classes of business, as they would be during prior periods of lower business activity. Conceivably, in certain localities today gas heating can be sold even though it were twice as expensive as other fuels, whereas it might command no price premium at all during a depression. A number of the eastern gas utilities represented at the conference indicated that their gas heating rates ranged from about a par with oil to about 15 percent above oil. They noted that under these circumstances they were securing all the gas heating business which they can serve within economic limitations.

Despite gargantuan efforts by pipeline suppliers and distribution companies to expand their facilities, it has been impossible to obtain and lay enough pipe to keep pace with the increasing demand. This problem recently has been accentuated further as industrial mobilization superimposes its gas requirements upon the unsatisfied domestic demand. As indicated by one speaker, this is a situation which is basically repugnant to utility managements who recognize their responsibility as utilities to serve all customers at reasonable rates.

The most direct solution to this vexatious matter would appear to be to increase the level of househeating rates to the point where they would reflect the premium value of natural gas fuel and still attract an economically sound degree of gas househeating saturation. For many natural gas distribution utilities which are currently earning the allowable regulatory return, this would necessitate reductions elsewhere in their rate structure. However, such a situation conceivably might create as many new problems as it would solve old ones. This could become particularly acute if there ever occurred, unlikely as such an eventuality appears at present, a reversal in coal and oil prices. This in turn might necessitate rate reductions for gas househeating to safeguard this business from competitive inroads.

The inherently poor annual load factor of the space heating business and the increasingly general adoption of two-part rate schedules by pipeline companies makes the matter still more crucial. Development of proper pricing policies of course is paramount. While there are certain factors common to the industry, local circumstances, such as the length and severity of the heating season, the availability and magnitude of interruptible and off-peak business, and the possibility of utilizing nearby underground storage facilities make it difficult to develop one industry-wide solution. For the companies which have yet to convert or have only recently converted, there usually is also the possibility of changing water gas sets to high Btu oil gas production for peak-shaving. It was evident from the discussions that whether to shave peaks and sell valley gas on an off-peak or interruptible basis, or whether to store gas in the summer for use in the winter, was one of the major questions to be solved by each company in determining a long-range program. Such storage is feasible if exhausted oil or gas fields, structures now bearing salt water, or impervious formations in which caverns can be excavated are available within a reasonable distance.

In developing off-peak business, the New England companies were cautioned against the possibility of under-pricing this class of service or of having it create new system peaks. Many of the older natural and mixed gas companies had developed a considerable volume of interruptible business. In some instances all of the industrial rate schedules provide for permissible interruptions. A few of the recently converted companies have also accepted a limited amount of large volume industrial off-peak or interruptible business but most of them are awaiting more experience with natural gas before committing themselves in this direction. This is particularly true where the present supply contract is not greatly in excess of the summer requirements and where the companies expected to do a large amount of peak-shaving. The possibility that *(Continued on page 52)*

Economic aspects of gas conversion

● Company managers at the jointly sponsored A. G. A.-NEGA Regional Economics Conference learned that, with the advent of natural gas into their lines:

(1) They will be entering upon a more dynamic and less certain business;

(2) They probably will enjoy substantial load increases;

(3) They must conduct research into basic marketing load and into other facets of their sales to determine the most economical and satisfactory means of serving adequately the rapidly growing business;

(4) They must study the relative merits of service restriction orders and of revised rate schedules to keep expansion of service demands within manageable bounds;

(5) They should, as they step into the era of natural gas service, "sell" their respective regulatory authorities on the need for new and more balanced rate structures. Such rates would be reasonable to both customer and companies insofar as they reflect value of the service to the consumers, reasonable allocations of costs and adequate returns to the companies to attract new capital from security holders;

(6) They should consider adequate pricing of gas service as a preferable means of trying to keep expanding gas service demands within gas supply limits; this method is superior to the restricting orders of regulatory bodies. Such service restriction orders are cumbersome, hard to administer equitably, unpopular to all parties concerned, and above all are out of step with the traditional utility obligation to serve all customers without discrimination, at fair and compensatory rates.

Ohio and California conferences point the way to improved gas utilization

Industry urged to put research into practice

Cleveland conference leaders: R. J. Rutherford (left), chairman, A.G.A. Committee on Domestic Gas Research, relaxing between sessions with Edward J. Nelson, conference chairman

Walter B. Kirk (left) and Milton Zare (right), representing A.G.A. Laboratories, chatting with Eugene D. Milener, conference manager

● How can the gas industry take the results of its research investigations and apply them to practical problems? This fundamental question was analyzed at two major research and utilization conferences during recent months. Latest thinking on the subject was discussed on the West Coast on April 26 and 27 during a two-day session arranged by the Committee on Domestic Gas Research of American Gas Association and by the Pacific Coast Gas Association. On May 24 and 25, American Gas Association's own conference was held in Cleveland, Ohio. Highlights of the two meetings are outlined in the following article.

A. G. A. Research and Utilization Conference

a PAR activity

Research and utilization programs being carried out under the A.G.A. PAR Plan were examined at the Cleveland meeting by a record audience of approximately 450 engineers, servicemen and general technical personnel of gas companies and manufacturing concerns. Special technical clinics on progress in combustion and burners, venting gas appliances, and changeover problems from the utilization standpoint, were major attractions on the program. The conference was held under the auspices of the Committee on Domestic Gas Research and the Utilization Bureau of A.G.A.

An inspirational keynote was sounded by Edward J. Nelson, Rochester Gas & Electric Corp., who presided at the opening session. He showed that utilities and appliance manufacturers must share a mutual obligation to develop the finest gas utilization equipment possible.

"We in the gas industry today are facing strong competitive conditions," he added. "If we are to meet this competition effectively we must develop a strong enough character in the gas industry so that individual companies and groups will be willing to sacrifice some immediate commercial advantage where such action will work to the advantage of the industry at large. . . .

"We are engaged in a knock-down, drag-out fight with a tough opponent," Mr. Nelson continued. "That opponent has a superbly outfitted tool chest and the knowledge and will to use his tools. The American Gas Association research program has supplied you with an excellent set of tools. I urge you to keep these polished through constant use. Accept these tools, learn their use and put them to work."

The newly adopted American Standard for "Installation of Gas Piping and Gas Appliances in Building" now used by both A.G.A. and the National Fire Protection Association was described by John H. Eiseman, National Bureau of Standards. Mr. Eiseman is chairman of the committee sponsoring the standard.

"No code or set of requirements can be drafted that will satisfy everyone," he said. "We believe, however, that the present House Piping and Appliance Installation rules are adequate to insure a safe and satisfactory installation if complied with. They are minimum rules in many instances, but this is necessary if they are to be national in character. . . .

"It is our hope," Mr. Eiseman concluded, "that these requirements will be used as the basis for the drafting of city and municipal ordinances."

Copies of the standard are now available from American Gas Association. Ask for "American Standard Installation of Gas Piping and Gas Appliances

Utilization of research findings was dramatically illustrated at Cleveland conference by a display of latest gas appliances and accessories. Left to right above are automatic gas oven ignition systems, part of the exhibit of advanced domestic gas utilization equipment, and display showing gas oven installed in kitchen wall. Delegates were reminded that utilities and manufacturers must cooperate in developing finest gas equipment possible

(Left to right) T. L. Robey, A.G.A.; John H. Eiseman, National Bureau of Standards; E. L. Hall, A.G.A. Laboratories; L. J. Eck, Minneapolis Gas Co.

Cleveland clinic on combustion and burners: (Left to right) E. J. Weber, A.G.A. Laboratories; Theodore Smoot, Lennox Furnace Co.; Herbert Luoma, Alabama Gas Corp; Charles Lamar, Harper-Wyman Co.; David L. Nicol, Jr., Institute of Gas Technology

in Buildings Z21.30-1950."

George B. Johnson, Minneapolis Gas Co., described the results of a comprehensive analysis of service calls made by his company. He concluded that an organized school on service training can help a utility to substantially reduce its costs. He recommended that each serviceman be recalled eight days a year for refresher courses and study of new appliances and new types of controls.

Do present water heating pressure and temperature relief methods satisfy conditions in the field? John W. James, McDonnell & Miller, Inc., Chicago, noted that compliance factors for temperature and pressure relief valves when supplied are prescribed in the new ASA Approval Requirements for Gas Water Heaters. However, there are no mandatory regulations regarding usage of these requirements. Moreover, he added, many localities differ on the most effective methods of protecting hot water supply systems.

"Fortunately, American Gas Association through research and publication has focused attention on the domestic water supply problem," Mr. James declared. "It is probable that additional investigation is needed before complete agreement or method can be attained. But at this stage it would seem advisable for interested parties to participate in a unified program."

Progress in installation, performance and servicing of gas all-year air conditioning was the topic of Walter F. Friend, Ebasco Services, Inc., New York. Mr. Friend's paper was presented by Carl A. McKinney, United Gas Corp., Houston, Texas. Mr. Friend is a member of the A.G.A. Technical Advisory Group for Heating and Air Conditioning Research.

(Continued on next page)

Frederic O. Hess, president, Gas Appliance Manufacturers Association, speaking at a luncheon meeting, urged the gas industry to increase its research program until it is commensurate with the size and importance of the gas industry. He noted that progressive industries spend from two to five percent of sales volume on research. This means that the gas industry should be spending from 60 to 150 million dollars for research if it followed this lead, he said. It should be remembered, he added, that the ultimate objective of research is "to translate and incorporate the data and facts into development and utilization."

Another dramatic feature of the luncheon was presented by R. D. McNeice, engineer of utilization, Public Service Electric & Gas Co., Newark, N. J. Mr. McNeice used a series of colored flame photographs to highlight changeover problems. He projected on the screen atmospheric gas flames utilizing manufactured gas. Alongside these pictures he showed, with a second projector, the same burner using different gases, showing changes in burning characteristics and size of flame taking place.

R. J. Rutherford, president, Worcester (Mass.) Gas Light Co., and chairman, A.G.A. Committee on Domestic Gas Research, presided at the Thursday afternoon session.

An interesting analysis of automatic gas clothes dryers from the technical angle was presented by George E. Mintner, Bendix Home Appliances, Inc., South Bend, Indiana.

Herbert Luoma, Alabama Gas Corp., Birmingham, led the four-part clinic on recent progress in combustion and burners. Earl J. Weber, A.G.A. Laboratories, presented a paper on solving combustion problems through research. T. H. Smoot, Lennox Furnace Co., Marshalltown, Iowa, analyzed the design problems of single port burners which are becoming of increasing importance to the industry. The burning characteristics of oil gases were reviewed by David L. Nicol, Jr., Institute of Gas Technology, Chicago. Charles Lamar, Harper-Wyman Co., Chicago, concluded the panel discussion by charting burner design factors important for flexibility and interchangeability. Mr. Lamar is a member of the A.G.A. Technical Advisory Group for General Utilization Research.

Friday morning's session was presided over by Keith T. Davis, Affiliated Gas Equipment, Inc., Cleveland, Ohio, a member of the A.G.A. Technical Advisory Group for Heating and Air Conditioning Research. Gas range ignition, the first subject on the program, was discussed by two speakers.

Claude S. Hazel, The Philadelphia Gas Works Co., declared that "technically the way is open for advancement of flash tube ignition. In the last analysis," he said, "it possesses all the possible advantages of electric ignition with none of the disadvantages."

Edgar A. Jahn, A.G.A. Utilization Bureau, described the current PAR Plan program under which ten leading automatic ignition devices of different types are being field tested on a total of 2,000 gas ranges. Immediate objective of this program is to accelerate the development of an automatic ignition system or systems reasonable in cost, easy and inexpensive to service, capable of manual operation in case of power failure if electric energy is used, and adaptable with equal satisfaction for use with manufactured, natural and/or mixed gases. Range manufacturers, control companies and utilities all are cooperating in the test program.

Some of the new ignition systems being used were displayed at the conference. Bryant, Tappan, Robertshaw, Perfex, Penn Electric, and Patrol Valve all displayed their devices and Roper, Tappan, Grand, and Universal provided ranges so equipped. Milwaukee Gas Specialty Company displayed a new valve for automatic ignition installations which was installed on a Caloric range. Other display items included a complete service man's kit by Minneapolis Gas Co.; an in-a-wall oven and drop-in cooking top by Chambers Corp.; experimental range top burners by Tappan Stove and Patrol Valve; a South Wind furnace and Saf-Aire heater by Stewart Warner Corp.; and a transport cargo heater by Utilities Distributors, Inc.

Use of pressure regulators on domestic gas appliances was discussed by John M. Pommersheim, Rockwell Manufacturing Co., Pittsburgh. The speaker suggested that the requirements in case of appliance trouble be carefully analyzed to determine where or not regulators are required.

Technical and operating problems of the new gas refrigerators were discussed in detail by the next speaker, Dr. William R. Hainsworth, vice-president in charge of engineering, *(Continued on page 47)*

Data published on cooking tests at SMU

THE MOST AUTHENTIC and reliable basis for comparison of gas and electric operating costs in commercial kitchens is provided in a newly published report on scientific tests at Southern Methodist University.

"Gas and Electric Consumption in Two College Cafeterias" is based on six months of investigation at SMU under sponsorship of American Gas Association's Committee on Comparison of Competitive Services. Results of the study should be placed in the hands of all those promoting the use of gas in commercial kitchens. Equipment dealers in particular will be interested in securing such information to assist them in reaching correct cost estimates. Committee Chairman Gebhard C. Beck, The Brooklyn Union Gas Co., has authorized printing of 1,000 copies of the SMU report and these are available from A. G. A. headquarters at 50 cents each.

There is no section of the country that is immune from competition in the field of heavy duty commercial cooking equipment. Of negligible importance a decade or so ago, this competition with gas equipment has grown to such proportions that it constitutes a major potential threat to the profitable commercial cooking load.

It is to the interest of those responsible for the selection and use of commercial cooking appliances, and to the utility companies as well, to have available authenticated data indicating the relative consumptions of gas and electricity for identical cooking operations under similar conditions. Cost estimates based on such data can be used with confidence in contrast to the type of estimate based on unsupported claims of manufacturers or on tests of limited duration. Tests under unlike conditions and tests of domestic appliances are also offered occasionally in competitive situations but they likewise should be rejected as invalid for the purpose.

To meet this lack of authentic data on both gas and electric equipment for large volume cooking, the Committee on Comparison of Competitive Services appointed a Subcommittee on Commercial Cooking Equipment Tests. The new group was to initiate and supervise a series of tests from which factual data could be obtained and to provide irrefutable answers to competitive claims. Frank H. Trembly, Jr., The Philadelphia Gas Works Co., is chairman of the subcommittee.

It was the aim of the committee to conduct a series of tests under as ideal conditions as possible and at a location that would support a neutral opinion. After considerable investigation it was found that Southern Methodist University in Dallas, Texas had two student cafeterias and conditions that would meet the requirements. The tests and studies extended over a period of 166 days during which meals of the same type were prepared in approximately equal quantities in two kitchens. One

(Continued on page 56)

Industry continues to top previous construction expenditure records, expects to spend still more in coming year

Pipeline construction increasing

Last year's expectation that the gas distribution and pipeline companies of the nation would for the first time in history spend over one billion dollars for the construction of new facilities in 1950 was more than realized. Spurred on by the continuing tremendous demand for gas service, which was augmented in the latter part of the year by the increasing requirements for industrial defense production, and undaunted by increasing difficulties in securing necessary materials, the industry expended $1.20 billion for new plant and equipment. This expenditure is about $130 million in excess of anticipations twelve months ago.

According to a recently completed survey by the Association's Bureau of Statistics, the industry apparently is not satisfied to rest on its laurels after breaking previous records during each of the preceding post-war years. The forecast for the year 1951 indicates estimated expenditures of $1.54 billion. Present expectations are that an additional $1.30 billion will be spent in 1952. For subsequent years, the estimated expenditures, particularly for transmission facilities, indicate a substantial decline but, as in prior years' forecasts, they may very likely be understated. Even so, the current estimates for the years 1953 and 1954 are almost double those projected for these years twelve months ago.

During the last five years, 1946-1950, the nation's distribution and pipeline companies spent $3.99 billion for the purchase and construction of new plant and equipment. In the next five years, 1951-1955, they expect to spend for similar purposes an additional $4.59 billion. As during the past five-year period when $2.19 billion were spent, natural gas transmission lines continue to represent the largest single category of expenditures with $2.40 billion being projected. This represents more than one half of the entire expected expenditures.

A construction program of this magnitude also connotes a corresponding major financing program for the industry. It obviously is impossible to predict precisely the prevailing future conditions in financial markets when individual companies have to sell securities. Expectations as to sources of funds to finance this construction there-

GAS UTILITY CONSTRUCTION EXPENDITURES BY TYPE OF GAS AND PLANT FUNCTION, 1950-55

(Millions of dollars)

Type of Gas and Plant Function	Actual 1950	Forecast 1951	1952	1953	1954	1955	Total Forecast 1951-1955	Total Actual 1946-1950
Natural Gas—Total	**$1,095.7**	**$1,433.8**	**$1,205.8**	**$636.4**	**$494.1**	**$424.8**	**$4,194.9**	**$3,433.4**
Production	76.7	89.1	95.1	58.0	38.0	34.6	314.8	
Underground Storage	25.7	29.8	37.3	13.9	8.7	2.3	92.0	372.6
Other Storage	9.3	10.8	9.1	9.5	13.5	3.8	46.7	
Transmission	713.3	994.8	773.0	295.4	185.8	146.8	2,395.8	2,187.8
Distribution	236.4	269.9	251.9	235.3	229.2	218.5	1,204.8	754.2
General	34.3	39.4	39.4	24.3	18.9	18.8	140.8	118.8
All Other Types of Gas—Total	**102.6**	**107.8**	**90.6**	**71.1**	**59.7**	**68.0**	**397.2**	**561.1**
Production and Storage	31.7	30.2	30.5	20.3	14.5	16.2	111.7	229.7
Transmission	3.0	1.8	4.4	4.4	3.0	4.0	17.6	20.1
Distribution	63.2	70.3	50.2	42.2	38.2	41.3	242.2	287.2
General	4.7	5.5	5.5	4.2	4.0	6.5	25.7	24.1
Total Industry—Total	**1,198.3**	**1,541.6**	**1,296.4**	**707.5**	**553.8**	**492.8**	**4,592.1**	**3,994.5**
Production and Other Storage	117.7	130.1	134.7	87.8	66.0	54.6	473.2	
Underground Storage	25.7	29.8	37.3	13.9	8.7	2.3	92.0	602.3
Transmission	716.3	996.6	777.4	299.8	188.8	150.8	2,413.4	2,207.9
Distribution	299.6	340.2	302.1	277.5	267.4	259.8	1,447.0	1,041.4
General	39.0	44.9	44.9	28.5	22.9	25.3	166.5	142.9

Source: Bureau of Statistics, American Gas Association.

fore at best can be only rough approximations. About 30 percent or $1.4 billion may be available from various internal sources, leaving the remaining $3.2 billion to be raised from outside financial channels. It is estimated that of the latter amount about $900 million will represent preferred and common stock issues. The rest or $2.3 billion will consist of debt issues.

For the first time, anticipated expenditures for the development of additional underground storage facilities are shown as a separate item. These total $92 million for the coming five-year period, although this amount is undoubtedly an understatement of eventual expenditures, because of the present inability of several of the responding companies to forecast completely their expectations beyond the next two years. The natural gas production data are not intended to depict all past or anticipated expenditures for this purpose. They merely reflect the status for those natural gas distribution or pipeline companies which are also engaged in production operations.

As the result of bringing natural gas to a number of new areas during 1950 and early 1951—such as Baltimore, New York, Richmond, Poughkeepsie —and the prospect of a continuation of this trend for such areas as New England, the Carolinas and upstate New York, the gas distribution industry is engaged in a major transition with respect to the type of gas being sold to consumers. Some of these utilities have already converted to natural gas or to mixed gas. Others are as yet uncertain as to the extent of their ultimate conversions. Because of this reason and the fact that the individual amounts involved are relatively small, the forecasts for the manufactured, mixed and liquefied petroleum gas branches have been combined. The declining trend of these anticipated expenditures among these companies is, to a considerable extent, a reflec- *(Continued on page 50)*

What can one man do?

By RALPH M. BESSE

Vice-president & general counsel
The Cleveland Electric Illuminating Co., Cleveland, Ohio

A. *What can you do in your capacity as a citizen-member of a democratic government?*

(1) Register as a voter.

(2) Inform yourself of the issues and candidates of the day.

(3) Vote at every primary and general election.

(4) Belong to a political party and support it.

(5) As a citizen-member of a democratic government, you can contact the officers who represent you in that government.

(6) Have the guts to oppose unsound actions by the government, even though it benefits you personally.

B. *What can you do in your capacity as a member of your community?*

(1) Support moral and spiritual values in your daily life.

(2) Belong to opinion-making organizations.

(3) Make the acquaintance of opinion-making people and give them your views.

(4) If you have the ability, you can write.

(5) Speak to groups of people if you have the gift of public speaking.

C. *What can you do in your capacity as a businessman?*

(1) You can treat your employees right. Be sure that you have good employee relations. Be sure that your working conditions are good. Endeavor to give your employees an ever increasing standard of living if your business can afford it. The working man of this country can be sold on the system of private enterprise if he can be convinced that private enterprise not only has produced more for him in the past than any other system, but what is more important, that it will produce more for him in the future than any other system. The first step in establishing this conviction in his mind begins in the shop in which he works. To the extent that you have control over the affairs of an employee or can influence the policies which affect the affairs of employees, see to it that this conviction is established and justified.

(2) Educate your employees. Your employees are being propagandized by labor unions, by subversive groups, and by government itself. They are being misled and they are being subsidized. They are being told half-truths. It is up to you as a businessman to tell them the facts. Nothing but the facts is needed. The truth is sufficiently powerful, if simply told, to convince the ordinary employee that his own best interest lies in the avoidance of taxes, governmental wastes and loss of freedom. It will take time and effort to do this but it can be done. And to some extent, at least, you can do it.

(3) Be familiar with the story of what your own company has done, both for its employees and for society. Your company's story is probably good. The story of most American business is good. But it has not been told. And who will tell it if you do not tell it. Even people in your own community are probably unaware of many of the fine things your company has done. You are the person to tell your community.

(4) Analyze your own company's practices in the light of the social needs of the community you serve. You can then advocate practices by your company which are for the good of the community and which will, to the extent of your company's ability, satisfy the needs of your community. There is a need in your community to care for disabled people who can do some work. Does your company share in employing them? There is a need *(Continued on page 56)*

Excerpts from address at A. G. A. Domestic Gas Research and Utilization Conference in Cleveland, Ohio, May 24-25, 1951 (a PAR Plan activity).

Proper choice of venting method must consider atmospheric conditions and wind direction and velocity

Clothes dryer venting in Chicago

By W. D. EGAN

Utilization Testing Engineer
The Peoples Gas Light & Coke Co.
Chicago, Illinois

Domestic clothes dryer installations in Chicago are becoming sufficiently numerous that certain interesting facts and figures are now becoming available. So far The Peoples Gas Light and Coke Company and Chicago department stores, dealers and so forth have sold and had installed approximately 7,500 clothes dryers, of which 6,000 were sold during 1950. In addition to those installed in Chicago, we have also heard of some interesting cases of clothes dryer installations in the suburban area around Chicago. The information presented herewith therefore is based entirely on clothes dryer installation in Chicago, its suburbs, and on our own laboratory tests.

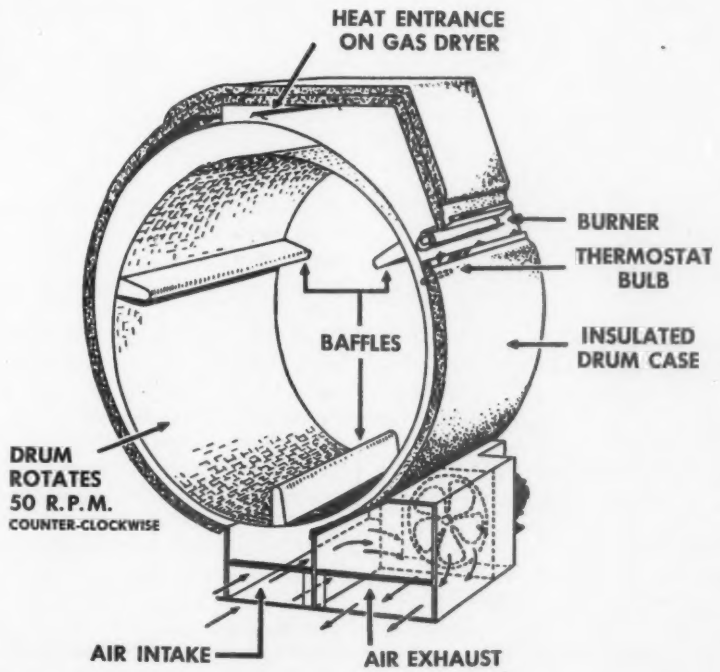
So far as we know, all clothes dryers to date have been installed initially unvented. Our company has followed an installation limitation rule whereby no clothes dryer is recommended for installation in a space of less than 1,500 cubic feet. On the basis of service reports, generally no customer complaints have been received when the dryer is installed and used in a space having a minimum volume of 1,500 cubic feet. Such a room would have dimensions of approximately 15 by 12 by 8 feet. Still generally speaking, when dryers have been installed in smaller than 1,500 cubic foot spaces, customers have complained about excessive moisture.

Abridged version of paper presented at A. G. A. Domestic Research and Utilization Conference in Cleveland, Ohio, May 24 and 25, 1951 (a PAR Plan activity).

However, unless it is thought that an unvented clothes dryer installed in a space 1,500 cubic feet or larger will always provide customer satisfaction, I will relate several instances in our experience to refute such a belief.

A family consisting of a husband, wife and three children had a clothes dryer installed unvented in a basement 25 by 25 by 7 feet providing a volume of 4,375 cubic feet. The basement windows were equipped with storm windows. Washing from two to three times a week because of three children, this customer complained bitterly of excessive moisture conditions. He then installed vent pipe and extended it through a basement window. He is now entirely satisfied with the performance of the clothes dryer, although he reports a layer of lint on the ground below his vent outlet.

Each of three families residing in identical six-room houses installed unvented clothes dryers in basements 25 by 40 by 7.5 feet, providing a volume of 7,500 cubic feet. Each basement had a



Diagrammatic sketch of typical clothes dryer shows heat input and air intake and exhaust

laundry room partitioned off from the rest of the basement. It happened that these basements had a lesser number of windows than is customary in homes of this type. These customers do not use their dryers to dry their clothes whenever the weather permits drying the clothes outside. They do use the dryers in the winter, but complain of excessive moisture. They are reluctant to use the dryers in mild weather and open the basement windows, because they complain of moisture condensing on cool concrete walls.

Another customer installed an unvented clothes dryer in the basement of his home, in which he also had installed several expensive power tools. He recently complained bitterly about the rusting of his fine power tools because of the moisture from the unvented clothes dryer. He now plans to have the clothes dryer vented to the outside atmosphere.

A customer residing in a home installed an unvented clothes dryer in a basement 25 by 50 by 7 feet, providing a space of 8,750 cubic feet. This customer has three children and washes three times a week, drying five to six consecutive loads a day. The basement is not equipped with storm windows or storm doors. This customer is generally satisfied with the performance of her unvented clothes dryer, but reports that she occasionally notices excessive moisture condensation.

Still another customer installed an unvented clothes dryer in the basement of his home. After only two or three operations of the dryer, he decided upon a friend's advice to have the clothes dryer vented out one of the basement windows. After the venting connections had been completed, he discovered that the dryer failed to perform the drying operation in a satisfactory manner. He discovered that atmospheric conditions prevented the dryer from venting. Upon the same friend's advice, he installed a vertical drafthood in the venting line. I have not learned to date the latest report from this installation, but I do not imagine that there is entire satisfaction.

There are similar cases which indicate that the minimum 1,500 cubic foot limitation for unvented clothes dryers is not the entire answer.

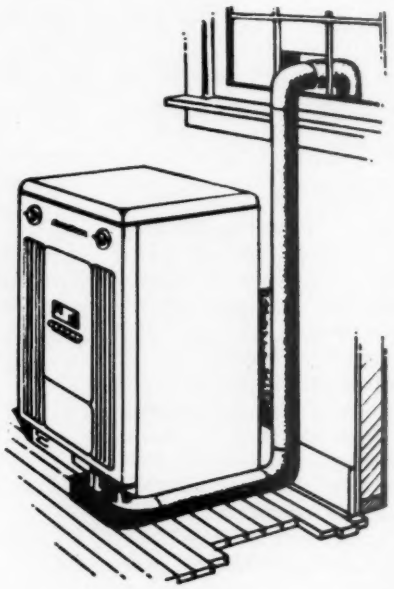
On the basis of initial relative humidity, moisture liberated by the burning of the gas, and the amount of water evaporated from the wet clothes by the dryer, about 12 air changes per hour would be the minimum required ventilation of a 1,500 cubic foot room to prevent moisture condensation on 60° F surface temperatures. These figures are based on an initial relative humidity of only 12.5 percent, two consecutive loadings of the dryer whereby ten pounds of water were evaporated, and the consumption of 16,000 Btu of gas during an hour's time. Certainly no kitchen or utility room would have 12 air changes an hour. Only about 8.7 percent of the total moisture liberated in the above case would be produced by the burning gas.

If the ordinary basement is considered as having about four air changes per hour, then if 4,500 cubic feet of space was available, no moisture condensation would occur under the conditions stated above. For a tightly constructed basement having storm windows and doors, moisture condensation would occur in a 4,500 cubic foot space, because fewer air changes could be expected.

Our actual experience seems to bear out the above theoretical figures. In the first case mentioned where a husband, wife and three children used an unvented dryer in a 4,375 cubic foot space, the basement was tightly constructed and the windows and door were equipped with storm windows. When the clothes dryer was operated unvented, excessive moisture was present.

Even in a 7,500 cubic foot basement which was tightly constructed and had few windows, the customer was not entirely satisfied with the moisture conditions.

However, it would not be fair to infer that all installations of clothes dryers in Chicago based on the 1,500 cubic foot limitation are causing customer dissatisfaction. Certainly the cases mentioned here are in the minority. Yet we are concerned with the minority and therefore are presently making a thorough study of the problems involved in the venting of clothes dryers. Attempts have already been made on some of the cases mentioned to eliminate customer dissatisfaction by venting the dryer. In three known cases the venting of the particular type dryers did not provide a satisfactory solution. These dryers did not perform in a proper manner when they were vented to the outside through a basement window. Adverse pressure conditions prevented their normal performance.



Basic arrangement for venting a typical modern automatic gas clothes dryer in a basement installation. Vent alongside the dryer, up the wall to ground level

In other cases and with another type of dryer, the venting of dryers proved to be entirely satisfactory.

From our experience to date we have definitely established in our own minds that certain types of clothes dryers can be vented directly to the outside atmosphere through the closest available window pane. Also from that same experience, we know that certain types of clothes dryers will not always perform with complete satisfaction if they are vented directly to the outside atmosphere.

First then, let us examine what atmos-

pheric conditions must be overcome by the vented clothes dryer. The most convenient means of venting the dryer is to connect the same size flue pipe over the size flue outlet provided by the manufacturer and extend the pipe through the closest available window. As far as Chicago is concerned, the side of the home to run the vent is immaterial. A table on Chicago wind velocities for the year 1946 shows that the wind can blow from any direction at any given time.

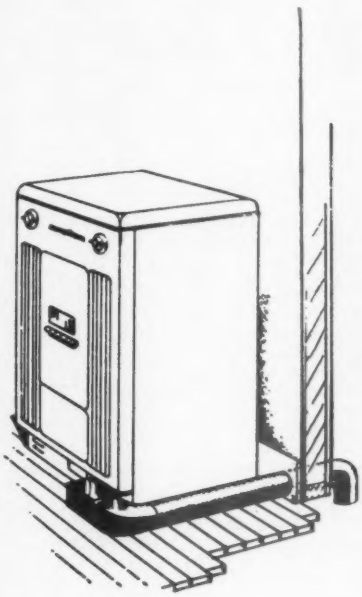
Some advantage may be gained by venting to the most sheltered side of a building rather than to an exposed side. However, the dryer must be capable of overcoming certain wind pressure even when vented to a sheltered side, since pressure can be built up even in an areaway.

There are no reasons why a clothes dryer cannot be vented to an available flue in a chimney, so long as no other heat producing appliances are being vented through the same flue. We do not anticipate very many such available flues in chimneys not already in use, therefore, we are not considering such venting possibilities at the present time.

A study of Chicago wind velocities and their equivalent pressures during the year 1950 shows average hourly wind velocities varying from 7.1 to 13.0 miles per hour, with the average for the year at 10.1 mph. Gusts of wind ranged up to 54 miles per hour during 1950. The means and extremes for the period of the Chicago Weather Bureau record shows gusts of winds up to 87 miles per hour.

Although the average hourly wind velocities create pressures ranging only from 0.028 to 0.091 inch of equivalent water column, high winds created pressures ranging from 0.333 to 1.473 inches of water column.

The next logical step is to study the capabilities of the present day clothes dryers to meet the venting requirements. My company has recently conducted a laboratory study to determine the venting capabilities of the three most popular makes of domestic clothes dryers. In order to be impartial as far as this paper is concerned, these three dryers are identified as dryers Nos. 1, 2 and 3.



Venting arrangement for an automatic gas clothes dryer installed on the ground floor of owner's home. Vent extends alongside clothes dryer, straight back through outer wall

All three dryer manufacturers provide a flue outlet connection for their dryers indicating that the dryers can be vented to the outside atmosphere wherever desired.

All three dryers first were thoroughly tested as unvented dryers. All three were found to perform to the specifications of the A. G. A. Laboratories, except for a few minor details which are unimportant insofar as a venting study is concerned. Each dryer was examined for its ability as a vented dryer to meet Chicago atmospheric conditions.

Chicago atmospheric conditions to be met can be reviewed briefly as follows:

Although the table on Chicago wind velocities shows gusts up to 87 mph, it is our belief that no sustained wind velocities over about 50 mph will occur very often. Probably any dryer which can overcome sustained wind velocities of 40 mph, or an atmospheric pressure of 0.785 inch equivalent water column would provide almost continuous satisfactory performance.

The results of the venting tests on each individual dryer are as follows:

Dryer No. 1—This dryer is equipped with a fan to draw the heated air, flue products and moisture from the drying drum and to expel these products from the clothes dryer proper, through a lint catching mesh screen, and then into the venting pipe.

Tests showed that the maximum pressure this system could develop was 0.16 inch equivalent water column. This pressure is equivalent to a wind velocity of 18 miles per hour. In other words, an 18 mile wind blowing against the venting outlet would cause a neutral condition to exist and no venting would take place.

Without a vent system this dryer required about 30 minutes to evaporate five lbs. of water from a load of wet-cloth material when it was operated unvented. When a flue pipe vent system (four elbows—four foot level window—requiring three lengths of flue pipe—all five inches in diameter) was connected to the dryer and operated against only atmospheric pressure, the time to evaporate five lbs. of water increased to 31 minutes. Then requiring the vent system to buck an 11 mile wind, the time of drying increased to 39 minutes.

These tests prove that this dryer would operate satisfactorily as a vented dryer as long as it was not called upon to vent against wind velocities higher than about ten miles per hour. At very high wind velocity it should not be operated as a vented dryer, unless some provisions can be incorporated in the venting system to relieve the back pressure. I will discuss this possibility later.

Dryer No. 2—This dryer is also equipped with a fan used to draw the heated air, flue products, and moisture from the drum and to expel these products from the dryer through a lint catching mesh screen, and then into the venting pipe.

Tests of this *(Continued on page 48)*

Importance of a good service-call analysis

By GEORGE B. JOHNSON

Minneapolis Gas Company
Minneapolis, Minnesota

After World War II, we were faced with a mutual problem like many other gas companies that believe in free service as one of the great assets to continued public acceptance of gas. That problem is the mounting cost of service. This spiralling of cost is due to many factors. Labor and material have more than doubled. Appliances have doubled and tripled in complexity. Demand for gas has increased new customers rapidly. Old customers have found more uses for gas and therefore their demand for additional appliances has increased. All of these factors have their effect on service problems so that it is easy to see why costs have not only doubled but in some cases tripled.

Our challenge was "What can we do about this rising cost?" It is obvious that a change in policy such as a charge service would retard the rising cost, but this would defeat our belief that free service is one of our best sales promoters and retainers.

We were positive that an organized school on service training would eventually help reduce costs, but we did not know where to begin so as to produce the most effective initial benefit. In order to start on the right road, we decided to make some kind of service analysis.

Paper presented at A. G. A. Domestic Research and Utilization Conference in Cleveland, Ohio, May 24 and 25, 1951—PAR Plan activity.

The first analysis was made on our 1946 complaints. The domestic appliance complaints were analyzed by taking a three percent sample of all complaints, picked at random and covering the entire city on an equal basis. Actually we analyzed 3,817 service complaints which represented five percent of all domestic service calls.

House heat complaints were analyzed by examination of all complaints on 1,350 house heat units. This is approximately three percent of all units installed on our lines at the end of 1946. The house heat units analyzed were also selected at random and covered the entire city.

Following are the results of this analysis:

In the accompanying analysis, we listed all call backs that occurred within a six month period. Some 80.5 percent of the call backs recorded on domestic complaints were made within one month of the original complaint. On house heat complaints, 93 percent of all call backs recorded were made within one week of the original complaint. The descriptive manner in which many complaints were written as to work done reflected a lack of knowledge on electric wiring, thermocouples, gas valves, relays, control switches, and all types of safety controls. Lack of knowledge on combustion was also indicated on burner adjusts, pilot adjusts, and flash tube complaints.

We find that 69.1 percent of our range complaints are on burner adjusts, flash tubes, and pilot stoppages. These three items accounted for 37.3 percent of our call backs, with flash tubes leading the parade with 16.2 percent. Flash tube adjusts affect the burner adjusts, and vice versa.

Water heater complaint summary shows that 43.3 percent of the complaints are caused by burner and pilot complaints. Another type of complaint enters the water heater field that we don't have in ranges. That is safety and thermostat complaints that account for 15.6 percent of complaints, and have a 43.3 percent call back, showing a lack of understanding on safety controls.

Refrigerator complaints show that flame adjusts account for 25.4 percent of all complaints. These adjusts had a call

RANGE

1946

	No.	% of Total Range Comp.	No. of Call Backs	% Call Backs for Item
Top Burner Adjust	663	*29.8	54	8.1
Oven Burner Adjust	265	*11.9	16	6.0
Minimum Flame Adjust	57	2.5	8	14.0
Pilot Stoppage	180	*8.1	12	6.7
Heat Control Adjust Under 25° F.	75	3.3	7	8.4
Faulty Heat Control and Adjust over 25° F.	60	2.6	11	18.4
Appliance Check	88	3.9	0	0
Levelness	11	0.5	2	18.2
Broken Parts & Repairs	130	5.7	7	5.4
Gas Leak	168	7.5	16	9.5
Conversions	16	0.7	0	0
Valve Work	94	4.2	5	5.3
Pilot or Flash Tube Adjust	432	*19.3	70	16.2
	2239	100.0	208	

Total Range Complaints 2,239
Total % Call Backs 9.3%

* 69.1%

1948

Pilot Stoppage	97	*4.9	11	11.3
Flash Tube & Pilot Adjust	241	*12.3	26	10.8
Top Burner Adjust	320	*16.3	27	8.4
Oven Burner	136	*6.9	11	8.1
Broiler Burner	12	.6	4	33.3
Top & Oven Valves	169	8.6	16	9.5
Heat Control	195	10.0	20	10.3
Piping Leaks	225	11.5	11	4.9
Thermocouple & Safety Controls	13	6.6	1	7.7
Clocks	4	.2	0	0
Minimum Flame	46	2.3	10	21.7
New Range Conversion	218	11.2	11	5.0
Levelness	18	.9	0	0
Repair Orders	93	4.7	0	0
Duplicate Orders	121	6.2	0	0
Disconnects	18	.9	0	0
Oven & Broiler Doors	32	1.6	4	12.5
	1958		152	

Total Range Complaints 1,958
Total % Call Backs 7.7%

* 40.4%

ER HEATER

	No.	% of Total W. H. Comp.	No. of Call Backs	% Call Backs for Item
Adjust	161	*12.5	11	6.8
Minimum Flame	176	*13.6	39	22.2
or Thermostat	115	8.9	27	23.5
Temp. Adjust	86	6.7	17	19.8
	103	8.0	10	9.7
	99	7.7	0	0
oppage	223	*17.2	43	19.2
Gas Line Filter,	41	3.2	5	12.2
Tank	48	3.7	2	4.2
ough Hot Water,				
egitimate	43	3.3	6	14.0
	42	3.3	6	14.0
Parts & Repairs	33	2.6	2	6.1
-Off	112	8.6	0	0
culation	9	0.7	1	11.1
	1291	100.0	169	

al Water Heater Complaints 1,291
al % Call Backs 13.1%

3%

ater Convert	137	10.3	9	6.6
oppage	175	*13.1	19	10.8
Bypass Adjust	162	*12.2	24	14.8
Adjust	118	8.9	15	12.7
at Calibration	113	8.5	10	8.9
	66	5.0	1	1.5
spection	11	.8	0	0
Gas Line or	28	2.1	2	7.1
Tanks	35	2.6	0	0
Flue	44	3.3	7	15.9
Orders	55	4.1	0	0
-Off	93	7.0	0	0
ks	81	6.1	4	4.9
at Not Seating	24	1.8	3	12.5
ugh Hot Water,				
egitimate	19	1.4	0	0
Piping Stoppage	24	1.8	3	12.5
Adjust	112	*8.4	7	6.5
Dryers	29	2.1	5	17.2
	1326		109	

al Water Heater Complaints 1,326
al % Call Backs 8.2%

7%

REFRIGERATOR

1946

	No.	% of Total Ref. Comp.	No. of Call Backs	% Call Backs for Item
Maximum Flame Adjust	35	*12.2	9	25.7
Thermostat	2	0.7	0	0
Water Line Plug or Leak	22	7.7	11	50.0
Defective Burner	12	4.2	5	41.6
Vapor Lock or Levelness	8	2.8	0	0
Inspection	46	16.0	0	0
Broken Parts or Repairs	14	4.9	1	7.1
Dirty Unit	25	8.7	2	8.0
Vacuum Clean	52	18.1	0	0
Dead Unit	6	2.1	4	66.6
Over Load Box	2	0.7	0	0
Turn On—Off	22	7.7	1	4.5
Gas Leak	3	1.0	1	33.3
Minimum Flame Adjust	38	*13.2	6	15.8
	287	100.0	40	

Total Refrigerator Complaints 287
Total % Call Backs 14.0%

* 25.4%

1948

Maximum Flame	104	*23.7	16	15.4
Minimum Flame	40	*9.1	9	22.5
Thermostat	20	4.6	4	20.0
Vapor Lock or Levelness	17	3.9	2	10.7
Repair Orders	22	5.0	0	0
Dirty Units	44	10.0	1	2.3
Vacuum Clean	58	13.2	0	0
Dead Units	9	2.1	5	55.5
Gas Leaks	15	3.4	1	6.7
Turn On—Off	33	7.5	0	0
Box Overloaded	1	.2	0	0
New Inspection	5	1.1	0	0
Defective Burner	7	1.6	1	14.3
Whistling	9	2.1	0	0
Plugged Filter	5	1.1	1	20.0
Heat Conductor Adjust	9	2.1	0	0
Gurgling Noise	3	.7	0	0
Hinges & Latches	19	4.3	3	15.8
Cabinet Odors	2	.5	1	50.0
Water & Controls	16	3.6	2	12.5
	438		46	

Total Refrigerator Complaints 438
Total % Call Backs 10.5%

* 32.8%

HOUSE HEATING

1946

	No.	% of Total Comp.	No. of Call Backs	% Call Backs for Item
Pilot Adjust	388	*7.0	58	15.0
Burner Adjust	184	*3.4	16	8.7
Pilot Stoppage	1309	*24.0	28	2.1
Thermostat	804	14.7	50	6.1
High Limit	169	3.1	18	10.3
Fuse or Switch	210	3.8	5	2.4
Wiring Defect	187	3.4	30	16.0
Humidity	100	1.8	0	0
Venting	54	0.9	1	1.8
Gas Leak	97	1.8	5	5.3
Gas Valve	245	4.5	31	12.6
Thermocouple	46	0.8	14	30.5
Safety Valve or Switch	206	3.8	20	9.7
Filter, Fan or Motor Defect	219	4.0	19	8.7
General Repair	260	4.8	0	0
Inspection, Check up or Advice	829	15.2	0	0
Governor	4	0.1	4	100.0
Liner	164	3.0	0	0
	5475	100.0	299	

Total House Heat Complaints 5,475
Total Call Backs 299
Total % Call Backs 5.5%

* 34.4%

1948

Pilot Stoppage	401	*20.1	60	15.0
Pilot Adjust	132	*6.5	17	12.8
Burner Adjust	60	*3.2	11	6.9
Thermostat	235	11.7	22	9.4
High Limit & Fan	37	1.8	3	8.1
Fuse or Switch	78	3.8	1	1.5
Gas Valve	87	4.3	14	16.0
Wiring Defect	33	1.6	5	15.0
Humidity	19	0.9	0	0.0
Venting	11	0.5	0	0.0
Gas Leak	65	3.2	1	2.0
Thermocouple	50	2.4	7	14.0
Safety BiMetal	55	2.7	4	7.0
Filter, Fan or Motor	94	4.4	2	2.0
Inspection or Advice	168	8.4	0	0.0
Governor	1	0.0	0	0.0
Liner	24	1.1	0	0.0
Cementing Door	13	0.6	0	0.0
Repair Orders	136	6.8	0	0.0
Oil	15	0.6	1	6.0
Chimney	4	0.1	0	0.0
Turn On—Off	99	5.0	0	0.0
Noise Due to Furnace Proper	7	3.0	0	0.0
Noise	27	1.0	0	0.0
Cleaning Needed	47	2.2	0	0.0
Corrected Input	39	2.0	3	8.0
Water Leak	10	0.4	0	0.0
Poor Pressure	14	0.6	0	0.0
Humidifier	2	0.1	0	0.0
Fumes	6	0.2	0	0.0
Radiants	7	0.2	0	0.0
Transformer	1	0.0	0	0.0
Smoke Test	7	0.2	0	0.0
	1984	100.0	151	

Total House Heat Complaints Analyzed 1,984
Total % Call Backs 7.6%

* 29.7%

back percentage of 41.5 percent which showed a lack of understanding of the importance or correct minimum and maximum pressure.

House heat complaint summary was not too bad. The greatest number of complaints were caused by pilot stoppage. Two reasons accounted for the fact that analysis was in better condition than the domestics:

(1) House heat complaints were completed by a special crew trained in house heat.

(2) New installations had been at a standstill because of the war, and the bugs had been ironed out of the old installations. In spite of this, if you look at the call back column, you will see that about 16 percent of the complaints that were due to pilots and safety controls resulted in call backs.

From the above analysis, we decided on the following course of action:

(1) Special crews of men were expensive because of duplication. All service men should be trained to handle all types of appliances, including commercial and industrial. This is justified because all appliances have the same combustion principles and *(Continued on next page)*

the same types of controls. The only variation is in the amount of gas burned and in the application of the controls.

(2) Set up a training school which will cover the theory and the mechanical know-how of making correct adjustments. This school must be of a permanent nature. The men scheduled to go to school must go regardless of how busy the service department is on complaints. All men regardless of their years of service must go through the complete school on all appliances (this took three weeks for each group). After the completion of the initial course, each serviceman is scheduled for about eight days of school each year for a refresher course and for studying new appliances and new types of appliance controls.

(3) Break up the service personnel into districts of not more than 25 men per district. Assign a supervisor for each district with full supervisory power. The supervisor is made responsible for the training and discipline in the field. His job is outside with his men.

(4) Assign a clerk to each supervisor, who can take care of time, records, and answer the phone for the supervisor on special calls from the customer and dealers.

(5) Establish a file system so that all complaints can be checked for previous calls. If a call on the same complaint comes in within a month, the previous calls are taken from the file and sent to the district supervisor for his attention.

The above five points were put into action in 1947. In 1949 we made a similar analysis on our 1948 complaints. The results of this analysis are as follows:

Comparison, 1946 and 1948

Comparing the two range complaint summaries, the four items on burner adjusts, pilot and flash tube adjusts that caused 69.1 percent of our complaints had dropped to 40.4 percent. The call backs on flash tube adjusts dropped from 16.2 percent to 10.8 percent. The over-all percentage on call backs dropped from 9.3 percent to 7.7 percent. This is not startling, but for the first year it indicated a reduction of about 1,000 range complaints. The increase in call backs on pilot stoppage was due to two causes; one was insufficient oil fogging and the other was improper cleaning of pilots on first call. Both of these have now been cleared up, the latter by better supervision and former by proper gas conditioning.

On water heaters the three items that had caused 43.3 percent of our trouble in 1946, namely burner adjust, pilot adjust, and stoppage had dropped to 33.7 percent. Our over-all call backs percentage dropped from 13.1 percent to 8.2 percent. It is interesting to note the large drop in call backs on safety adjusts from 23.5 percent to 12.7 percent, on thermostat calibration from 19.8 percent to 8.9 percent, on pilot adjusts from 22.2 percent to 14.8 percent. This indicates the effect of theory training.

On refrigerator complaints we had a reversal. We found that the maximum and minimum flame adjust which caused 25.4 percent of our complaints in 1946 jumped to 32.8 percent in 1948. Investigation of this condition indicated that we were having trouble with an unstable flame. We had been training our men to set refrigerator burners with as hard a flame as possible in order to obtain larger primary air openings. Our reasoning was that it would take a longer time for the primary air to plug up. After many discussions with Servel, we finally agreed to set our flames softer and keep a check on Servel complaints. (Servel claimed that a softer flame would clear up our unstable condition and would not increase our complaints.) After one year, we were convinced that Servel was correct. We reversed our training in school and everything has been fine since.

House heat complaints followed the same trend that showed up in domestic appliances except that our over-all call backs jumped from 5.5 percent to 7.6 percent. This was mainly due to pilot stoppage which jumped from 2.1 percent to 15.0 percent, due in turn to gas conditioning and a great increase in house heat customers. In 1946 we added very few customers, while in 1948 we added 10,000 customers.

New house heat customers and new appliances have a great effect on complaints. We found by another analysis that when a customer replaces a manual appliance with an automatic appliance, the complaints rise from an average of 0.3 percent of one complaint per year per appliance to 0.7 percent of a complaint per year per appliance. We made a special analysis of our 1948 house heat complaints to determine the relationship between age of equipment and complaint frequency. The results were as follows:

Year	*Complaints Per Year Per House Heat Installation*
First	1.0
Second	0.7
Third	0.7
Fourth	0.4
Fifth	0.4
Sixth	0.4
Seventh	0.4
Eighth	0.4
Ninth	0.7
Tenth	0.7
Eleventh	0.7

The first year is high because of initial inspections that we make on all installations. The second and third years are high due to chronic bugs that have to be ironed out. After the eighth year, the complaints start climbing again because of controls that begin to wear out.

We have not made any extensive analysis since 1948, *(Continued on page 48)*

Responsibility doubled in emergency

TWO major tasks face us as an industry, and we must not fail in performing either of them," cautioned D. A. Hulcy, president of A. G. A., president of Lone Star Gas Company and president of the U. S. Chamber of Commerce, during an address before the Southern Gas Association. "The first is that we must maintain fully and at all times our ability to assume successfully the heavy industrial work of assisting in turning out the manifold implements of war that our country's situation in the world may require. The other is that we must make sure that the service we render to millions of American homes will be maintained in the high state of efficiency. On this we must insist, for in a time of emergency such as this it is essential to sustain a high morale among the people. We do not know all that may be required of us or for how long. It is likely to be for so long a time in the future that we had just as well regard it as 'normal' from now on. But no matter how long it takes, nor what may be required, we must see to it that the gas industry measures up and carries on to the end.

"At a time when our whole heritage of freedom is in danger, our responsibility as trustees and guardians of that heritage should be supreme in our thoughts. This responsibility makes it imperative that we shall become more completely united and stay that way. If we do this, we shall yet see greater things for our industry than the truly great things we already have witnessed. We shall at the same time help to bring better things and a better time to our country and to the world."

Old Stove Round Up to the rescue

a PAR activity With dealers' stocks at an all-time high since the end of World War II, the annual Old Stove Round Up sponsored by American Gas Association, with the cooperation of Gas Appliance Manufacturers Association, comes at an opportune time. Scheduled for September, October and November of this year, the Round Up should easily sell more than one million gas ranges.

The drive will follow the general pattern of similar merchandising events which have proved so successful in past years. A new note has been added to the 1951 version, however, in the person of glamorous Esther Williams who will be the gas industry's Number One Sales Lady. M.G.M. has been working for some time on its new technicolor musical, *Texas Carnival*. It is Esther Williams' first western venture and co-starring with her is Red Skelton. Miss Williams uses a gas range in her own home and has given a glowing testimonial on automatic gas cooking which will be featured in A. G. A. national advertising during the Round Up.

Window Displays featuring Esther in western regalia will be offered through the A. G. A. Promotion Bureau for utility and dealer use. She also will be featured in 22" x 28" counter cards, the jumbo range price tags, and a scene from the actual picture will be distributed to all utilities subscribing to the Hollywood Board Service. Newspaper mats for utility use will be available in three and four column sizes. Add to these promotional pieces the continuous window banner strips, fishtail pennants, round up easel cards, aluminum ware cooking sets, western hats, etc., and you have a picture of the full impact you can get from the Old Stove Round Up by organizing your dealers for effective action now.

The rash of price cutting spreading through the country serves as a timely warning that something must be done to keep dealers profitably occupied. Every wave of scare buying such as was felt right after the onset of the Korean War and again in December and January, is followed by a decided slowdown in business. Scare buying is always anticipatory in nature and exhausts the prospect list for an extended period.

Manufacturers, in the meantime, have been building big backlogs of merchandise so that dealers' stocks are now greater than at any time since World War II. Even though steel allocations have been cut back, production is still greater than it was in 1949. Add to the limited production, big dealers' stocks and you have a real merchandising problem on your hands. Distressed stock breeds stock cutting—price cutting results in an upsurge of business failures. To keep good gas appliance dealers on the profit side of the ledger makes the 1951 Old Stove Round Up one of the most important merchandising events in recent gas company history.

Interest in the 1951 Round Up is at an all-time high. Several range manufacturers have already announced their participation and have distributed their portfolios and advertising materials. The Gas Appliance Manufacturers Association through its "CP" Range Division, is making up a special Round Up kit for dealer salesmen to use on their dealer calls to build up interest in the promotion. Sales managers of Southern Gas Association indicated 100 percent participation at a recent meeting held in New Orleans. Gas utilities on Pacific Coast are making their plans for a coastwise tie-in.

Metro-Goldwyn-Mayer is issuing a special press book suggesting ways in which theaters can tie in with local gas companies to promote the picture and assure the success of the Round Up. One of the exciting features of the picture is a breathtaking chuck wagon race. You can enlist the support of your dealers, toy stores, department stores, etc., in sponsoring a chuck wagon contest for the small fry. Youngsters will dress up their wagons in authentic western style, bringing them down to the gas company for judging with appropriate prizes to be offered the winners. This will give you good publicity via newspapers, radio and TV.

All in all, the 1951 Old Stove Round Up comes at a time when sales are lagging and will prove the value of nationwide promotion sponsored by the gas industry through its PAR Plan.

Research in the news . . . . .

Thermocouple type automatic ignition systems analyzed

By L. J. KANE

Research Engineer
A.G.A. Laboratories
Cleveland, Ohio

a PAR activity

In recent years the acceptability of domestic gas appliances has been greatly advanced by the adoption of automatic ignition systems to many classes of gas-fired equipment. The satisfactory performance of such equipment in large measure is dependent on the proper use and functioning of thermal sensitive elements in conjunction with gas pilot burners. Together they provide the major safety factor of an automatically controlled appliance. Consequently comprehensive studies of this relationship of the pilot burner and the thermal sensitive element were undertaken by the American Gas Association Laboratories as part of PAR Plan research endeavors.

Much useful information and data on the subject and related technicalities of pilot design, construction and performance have been gathered and published. Latest in this series is presented in Research Bulletin 64, "A Study of Thermocouple Type Elements for Automatic Ignition Systems." The work was sponsored by the Committee on Domestic Gas Research as a gas water heating research project. A similar study of bi-metallic thermal elements was reported in Research Bulletin 42 while supplementary studies of pilot burners were presented in Interim Report 1123-A and Research Bulletin 57.

Bulletin 64 provides fundamental working information about gas appliances with automatic ignition systems of the thermocouple type and may well serve as a basis for preparing a service manual. A sketch of a typical automatic ignition system of this type is shown in Figure 1. The function of the thermal element in this system is to provide a means for maintaining the main gas control valve in the open position when an ignition flame is available and to shut off the supply of gas to the main burner in the event of failure of the pilot burner flame. Effective ignition from the pilot flame must be assured at all times that the main gas valve is maintained in an open position.

Magnetic circuits of these types of controls are designed to operate at millivoltages much lower than those usually generated at the rated input of the pilot burner. For this reason the thermocouple type element will generally tolerate an appreciable variation in pilot burner input rate. The minimum turndown rate is a function of pilot burner design and of its application to the appliance. This is due to the fact that a given minimum input rate on one gas which would satisfactorily ignite the burner of one appliance might not provide satisfactory operation on all gases and all applications. Therefore, the pilot burner must be placed in fixed relationship to the main burner so that when the energizing flame is heating the thermal element sufficiently to maintain the valve in the open position, there is sufficient flame to ignite the main burner.

Figure 2 illustrates the four possible types of performance that may be encountered with this type of automatic ignition system. In the upper right hand quadrant satisfactory ignition is shown. The pilot burner input rate is in excess of the minimum necessary for effective ignition of the main burner and the millivoltage sufficient to hold the valve in an open position. However, if the pilot burner input rate remains sufficient to provide main burner ignition and the millivoltage drops below the minimum necessary to hold the valve open, false safety occurs as shown by the lower right hand quadrant.

The upper left hand quadrant illustrates a possible unsafe condition.

The valve is held open but the pilot burner input rate is insufficient to ignite the main burner in this particular installation. If the pilot burner input rate falls below the minimum necessary to ignite the main burner and the millivoltage is insufficient to hold the valve open, the automatic ignition system is inoperable as illustrated by the lower left hand quadrant.

Figure 2 also illustrates the effect of rotation of the entire pilot assembly. Six curves show the effect of the pilot assembly positions indicated at the top of the figure. The data were taken from a typical contemporary control device and indicate that the recommended positionings of control manufacturers are optimum. Similar results were obtained with variations in angular positioning of thermal elements with respect to vertical pilot burners. A deviation from manufacturers' tolerance and positioning may be expected to result in an unfavorable variation in the millivoltage developed and affect main burner lighting by providing either false safety or unsafe conditions. Manufacturers' claims for representative types of thermal elements were found to be quite valid and elements of this type are effective when properly applied. It will be noted that although the curves for positions C and D indicate

higher millivoltages at lower input rates than position B, both of these curves pass through the unsafe ignition quadrant.

Tests imposed by varying pilot manifold gas pressures indicate that properly applied thermocouple type elements, as presently designed and extensively used throughout the industry, will tolerate an appreciable variation in input rate. Effective lighting of the main burner can be accomplished as long as the pilot burner rate is maintained at or above the minimum rate necessary to actuate the control mechanism.

It should be understood that for all practical purposes the millivoltage output of a thermocouple element is not a direct function of Btu input to the pilot burner. This can be explained best by the manner in which a manufacturer proceeds with the design and application of pilot burners. By first taking into consideration the applicable and dimensional characteristics that must be met, the size of the pilot burner, relationship of thermocouple to energizing port and relationship of energizing port to ignition ports are established. Then by experimentation the correct orifice size and primary air relationship is developed to give what is considered to be the optimum operating voltage for the valve. A natural gas orifice is, within itself, a compromise to give the best over-all performance on the various natural gases encountered in service. The same is true for other gases. Therefore, at any given operating condition, the ultimate voltage output may be obtained at various pilot burner gas input rates which are primarily determined by gas supply, pilot location, and ambient temperature effects on hot and cold junction temperatures.

When ambient temperature around the thermocouple type element is increased, it causes a relatively greater rise in temperature at the cold junction than that occurring at the hot junction. The resulting net decrease in temperature differential between hot and cold junction causes a decrease in output millivoltage. It was found that if the thermal element lead, pilot burner orifice, and pilot gas line are installed in the lower ambient temperature zones recommended by control manufacturers, millivoltage generated by the thermal elements will be satisfactory over the entire range of temperature conditions normally experienced in domestic appliances. Copper connection wires of *(Continued on page 55)*

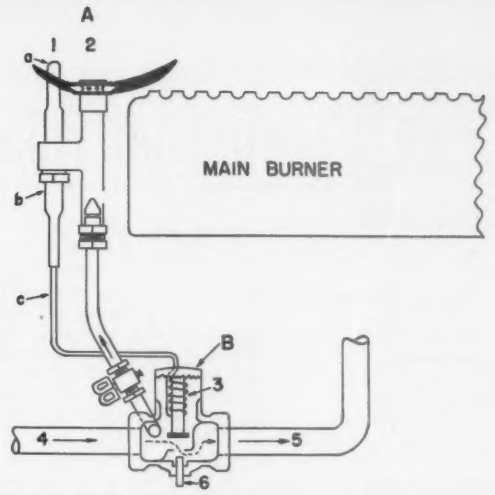


Figure 1. Automatic ignition system with thermocouple type element

COMPONENT PARTS OF AN AUTOMATIC IGNITION SYSTEM

A. PILOT ASSEMBLY
- 1. THERMAL ELEMENT
  - a. Hot Junction
  - b. Cold Junction
  - c. Connection Wires
- 2. PILOT BURNER

B. AUTOMATIC MAGNETIC GAS CONTROL VALVE
- 3. MAGNETIC VALVE IN OPEN POSITION
- 4. MAIN GAS SUPPLY
- 5. GAS TO MAIN BURNER
- 6. MANUAL PUSH BUTTON

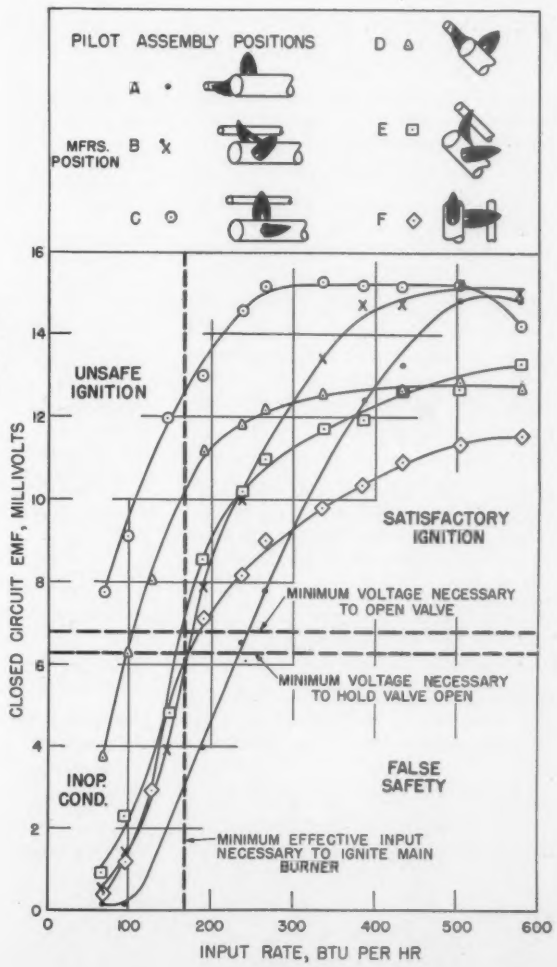


Figure 2. Effect of pilot assembly positioning on closed circuit EMF at various input rates

Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

Edited by Bernard H. Kinzer

● **Recruiting device**—Aldens, Chicago mail order house, gets better than average results from its college and university recruitment campaign. Company provides each university placement officer with a neatly packaged kit containing the annual report, the employee handbook, details of the profit sharing plan, and a check list of sound personnel policies. Kit is titled: "The Graduate's Guide."

● **University graduates**—This year are entering the best peacetime employment market ever known, according to Samuel H. Beach, director of placement at Columbia University. Not only do they have a greater freedom of choice than ever, but salaries have reached a new high. In the non-technical fields, candidates for bachelor's degrees are being offered from $225 to $300 per month, while those students soon to receive master's degrees are able to command from $250 to $350.

● **Recruiting clerical help**—Consolidated Edison System Companies have inaugurated a clever idea for recruiting typists, file clerks, stenographers, messengers and other clerical workers. Attached to *Around the System*, their employee magazine, is an insert with a bold heading announcing "Con Edison is Looking for a Girl." The insert invites the reader to send interested applicants to the Service and Placement Bureau, with a card of introduction properly filled out by the employee making the introduction. Assurance is given the employee that the applicant will receive every consideration and that a report will be made on the results of the application. The card of introduction reads: "This will introduce Miss .... who is interested in securing a position with Consolidated Edison. Please show her every consideration. Sincerely, ... Dept. ..... Date ....."

● **Timely tip**—Employees who fill out employment applications at General Motors, Detroit, Mich., are asked to list the names of three previous supervisors under the "Work Experience" section of the form. Applicants, assuming that company will get in touch with previous foremen, are more likely to tell a truer story about their experience. Try it. It works.

● **Military vacancy must be filled by "eligible"**—Public Service Electric and Gas Company has been ordered by an arbitration board to return to an "eligible" employee a job it eliminated from the bargaining unit when the former holder entered the military service. The fact that confidential employees then continued the functions of the job cogently proved, according to the arbitrator, that the work was still considered necessary. Hence it should be performed by an employee eligible to belong to the unit, in this case the Utility Co-Workers Association.

Evidently P. S. & G.'s defense was rather easily pierced by the union's loopholing strategy. Management insisted that confidential employees had performed the work when the same employee had previously been in the service. The union quickly countered that at that time the job was recognized as confidential but now was part of the bargaining unit. Next, the company executive pointed out a provision of the contract, viz.: "It is understood that employees in supervisory and confidential positions may perform work assignable to employees of the bargaining unit, when occasion requires." He then related several instances where confidential people had performed the duties of this job during periods when the employee holding the job was absent from the office. But the board pointed out that this provision applies to "exceptions for limited times." It upheld the union's contention that the collective bargaining agreement denied the company the right to eliminate a union member's position and have ineligible employees continue to perform the functions.

● **Increasing work week**—Any company considering an increase in the number of work hours in a week should read the Labor Relations column by Lawrence Stessin "How Many Hours" in the May 15 issue of *Forbes* magazine.

● **Audio-visual materials**—A guide to audio-visual materials in the field of industrial and labor relations is being made available to the public by the New York State School of Industrial and Labor Relations at Cornell University, Ithaca.

The 47-page guide lists films, film strips, and recordings used by management, unions, and educators. The list is divided into nine subject areas: Industrial safety, labor history, education and training, supervisory training, steward training, economics, politics and social welfare, human relations, and industrial history and processes.

● **Ohio Oil explains annuity plan to 6,000 employees**—The annuity plan for employees of The Ohio Oil Co., Findlay, Ohio, was first adopted in 1935. Since then the plan, which is contributory, has been thoroughly discussed at employee meetings and described in the employee magazine, *The Beacon*.

With this background, the presentation of amendments to the retirement plan did not require a major selling job. Management recognized that employees understood the retirement plan before the amendments, and, therefore, presented the revisions in an explanatory manner. By means of flip charts, the reasons for each change in the plan were explained and the discussions with the employees that ensued regarding differences before and after revisions made the new plan understandable.

Other charts covered such matters as what happens to the employee's fund if he leaves the company before retirement age; the amount he will receive when he retires; and the distribution of the fund in case of his death. Simple charts with straightforward explanations are more convincing to employees than elaborate color films or similar devices.

To bring the story to the company's 6,000 employees required more than 200 meetings throughout the company in 60 days. This lion-sized job was undertaken by 15 members of the company's personnel department. Sometimes four meetings were held in one day.

● **Suggestion plan opened to retired employees**—In most companies, after employees retire their only contact with the company is the monthly check they receive. A few companies have provided clubrooms for their pensioners but, by and large, they are the forgotten men—and women.

At the Nashua Gummed and Coated Paper Company, however, it's different. All retired employees were invited to take an active part in the company suggestion system last year. All the "tools"—suggestion booklet, blanks, envelope, and instructions—were sent to them along with a special letter explaining the setup. The letter read in part:

"We feel that you, the alumni of the company, after the many years of experience with the organization, will have a lot of good ideas and now may have time to work out suggestions which will help us to continue to keep the 'Card Shop' a progressive company. Adopted suggestions will, of course, be eligible for awards in accordance with our suggestion plan."

● **Fireye protects industry from hazards of fire**—Fire detection systems which react only to heat, smoke, and other secondary signs of fire, usually react slowly. Unlike these systems, the device which has been developed by the Fireye Corporation reacts instantly, since it operates immediately when it "sees" a flame.

The "Fireye" system consists of a control box and six detectors. Each detector is a tiny lead-sulfide type of photoelectric cell that reacts to infra-red light flickering at a frequency of 5 to 20 cycles per second. One detector covers a radius of 20 feet. Upon "seeing" a flame or the reflection of a flame, the detector sends an impulse to the amplifier in the control box. The amplifier, in turn, rings an alarm. The detector is not affected by accidental fluctuations in illumination such as might occur with rapid switching on and off of lights.

(Continued on page 50)

Three-way discussion reveals new ways for the internal auditor to serve his company

New horizons for the auditor

ALAN A. CULLMAN, *CHAIRMAN* · RALPH F. McCLONE, *VICE-CHAIRMAN*

• How can the internal auditor better serve his company? Read the following article, then draw your own conclusions. This presentation is an abridged version of three papers delivered at the National Conference of Electric and Gas Utility Accountants in Chicago, April 23-25, 1951. A. G. A. activities in this field currently are directed by the Internal Auditing Committee, P. J. Buzanga, Consolidated Edison Co. of New York, Inc., chairman.

Responsibility of the internal auditor

By J. D. HOGAN

Michigan Consolidated Gas Co.
Ann Arbor, Michigan

Procedures, policies and practices, together with the personnel who are responsible for their effective use, are the most important factors behind the efficient operation of a company. This premise applies not only to the accounting and financial functions, but also to production, service, customer relations, labor-management relations and other related activities. Management, through a well-trained staff, can develop complete procedure manuals covering all phases of its operations. It can formulate policies that clearly outline the position of the company. But can it be assumed that clearly written media and competent personnel will attain the desired results? The answer is contained in the following quotation from a paper by Arthur E. Hald, Consolidated Edison Co. of New York, Inc.:

"The interpretation and adminstration of policy in large organizations must necessarily be left to various levels of authority within the company. It sometimes happens that somewhere, within the organization, there is a failure to know of the existence of a policy because the pipeline of information has become clogged or diverted. It more frequently happens that the requirements of a policy are not understood. In other cases both knowledge and understanding of the policies are present but the administrative technique is not effective. The internal auditor can be valuable in these cases. He can furnish the knowledge and interpretation of policies and be helpful in the correction of the defects in the avenues of information. Where the administration of policy is poor, he can be constructive in his recommendation to cure it."

Such a statement coming from the auditor of the largest public utility in the country indicates the extent to which his management views this important responsibility of the internal auditor. Moreover, the answers to the questionnaire circulated by the Sub-Committee on Internal Auditing in 1948 showed that 112 out of 125 companies answering included this function as a part of their audit procedures.

In discussing the importance of objective reviews of a company's policies, procedures, and practices, a leading Harvard professor concludes his comments with the statement that "—the internal auditor is the only logical individual who should be assigned such responsibilities." These conclusions were based on an analysis of the organization charts of many corporations and management's dependence upon an independent appraisal. It is generally recognized that in the divisional type of corporate organization, in which separate officers have responsibilities for production or operation, sales, finance, and accounting, and perhaps employee relations, the interests of one division often conflict with those of another. In fact, top management's greatest problem is to maintain constant harmony among these groups to the end that all phases of a company's operations are effectively coordinated. Recognizing the inherent problem in obtaining unbiased facts and conclusions, management often looks to the internal auditor to achieve this end.

The broad field of payroll procedures and practices generally proves to be fertile ground in finding exceptions

Abridged version of three-part presentation during National Conference of Electric and Gas Utility Accountants in Chicago, April 23-25, 1951.

to what are considered standard practices. Company policies and governmental regulations as well play a very important part in governing the practices in respect to payroll operations. A few examples of practices in this field will better illustrate my point.

Many companies have written policies, designed around the provisions of the Fair Labor Standards Act, that serve as a guide to proper classification of employees. Other companies determine proper classification by assuming that the individual making the classification has read the law and understands it. In either case, if follow-up reviews are not made and periodic reviews continued, particularly when responsibilities or personnel changes are made, it may be found that governmental regulations, as well as company policies, are being violated. Violations to governmental regulations, even in an isolated instance, can sometimes be very embarrassing.

Any change in payroll procedures creates problems because it disturbs routine operations. A specific problem, that illustrates this point, recently came to my attention.

Several months ago, management of a company decided to recognize work performed on other than the normal day-time shift, with a shift-pay differential which was a stated amount added to the regular hourly rate for hours worked. Payrolls were computed and paid by each of the several operating units of this company. Prior to this change, payment for over-time hours was routinely figured at one and one-half times the employee's regular rate. Subsequent to this change, payment for over-time hours could not be figured in a routine manner by those responsible, if provisions of the Fair Labor Standards Act were adhered to. Here we are confronted with a governmental regulation affecting a company procedure, and even though the newly established procedure might well recognize the necessary changes, it cannot be assumed that proper understanding of this revision will automatically reach the lowest level of responsibility.

Practices in respect to benefit payments, bonus payments, commissions, and union agreement requirements should be checked in respect to provisions of the procedure manual. In addition, the procedures themselves should be evaluated in terms of current requirements.

The same holds true in respect to customer accounting and collection policies concerning forfeited discount allowances and pro-rated billing, also in merchandise sales in respect to employee discounts and quantity discounts. Auditing of Accounts Payable obviously should include a verification of not only the disbursement function but also management's policies in respect to the requisitioning and ordering of materials. I am certain that all companies have some semblance of an established procedure governing the requisitioning and ordering functions, but just to establish this procedure does not guarantee it is or will be followed.

The degree of employee participation in company benefit plans is a non-accounting survey that could properly be the responsibility of the internal auditor.

The question of security deposits and related interest thereon raises some interesting questions as to how far the internal auditor shall go beyond the point of checking the accuracy of the deposit ledger or file. How long should deposits be held on active accounts? Should deposits be required from home owners? Should deposits be required at all? In the normal course of auditing the deposit records, policies that answer these and many other questions can be reviewed or policies and procedures can be recommended.

An interesting case history was offered in support of this topic by a member of the A. G. A. Internal Auditing Committee in respect to the delivery of merchandise appliances. A study was made which showed the average cost of delivery in terms of manpower and equipment together with related overheads. A commercial cartage firm offered a bid that was one-third less than the average company cost.

Many policies or procedures within a company, within districts of a company or even in departments, are the result of traditional authority vested in district managers or supervisors, or department heads. When such policies are related to such functions as operations, property construction or merchandising activities, they produce a definite accounting effect, and it is understandable that under such circumstances different accounting results might well appear within units of the company. If these practices are at variance with established company policies or procedures it is obviously someone's responsibility to recognize them. Should not that responsibility be delegated to the internal auditor?

The more I studied the opinions, articles and problems that served as a basis for my paper, the more apparent it became that the title was not a question but rather a statement of fact.

I have asked many questions on this subject and read numerous opinions in different articles. My conclusion is that the most important function of the internal auditor is his responsibility in the determination of compliance to and evaluation of established policies, procedures and practices.

Evaluation of operating performance and personnel

By A. J. GREGORY

Wisconsin Electric Power Co.
Milwaukee, Wisconsin

Internal auditing had its origins as a policing function and was largely concerned with the detection and prevention of fraud. Today, the auditor is equally concerned with the operations of his company from the standpoint of efficiency.

The internal auditor cannot afford to by-pass this phase of his responsibility if he wishes to be recognized as an integral part of management organization. This is especially true of larger organizations. It is the responsibility of the internal auditor to assist manage-

ment in determining that its delegated functions are being performed satisfactorily and that the organization is operating efficiently.

Efficiency of an organization is dependent largely upon two factors—personnel and operating performance. These factors are closely related and the auditor must recognize this relationship. First, let's consider the human component—the evaluation of personnel.

Advantageous position

The appraisal of employees and their efforts is not necessarily confined to the internal auditor. Some phases of this work may be performed by wage and job specification staffs, management engineering firms, and others. However, the internal auditor, by the very nature of his work is in an advantageous position to appraise employees and their performance. In this connection, the internal auditor should exercise caution in attempting to appraise or evaluate the technical abilities of individuals with whose work he is relatively unfamiliar.

An evaluation of personnel is generally a corollary of other auditing work. It is possible for the internal auditor to make appraisals of efficiency without employees being too conscious of the fact that he is there for that purpose. The auditor will have knowledge of the internal controls applying to the work performed by the employees which enables him to determine the manner in which inefficiency in one individual affects the work of others. Likewise, the auditor is in an ideal position to observe whether the employees are working as a team toward the objectives the company is seeking, as well as merely performing efficiently as individuals. The auditor often is in a position to assist management in arriving at an opinion of an individual who is being considered for promotion. The scope of the auditor's activities is by no means limited to operating personnel; he should be equally concerned with standards of efficiency at supervisory levels.

So far we have considered why the auditor should evaluate personnel. Let us look next at the means by which this is done. Personnel psychologists have established certain requirements for the evaluation of personnel. First of all, the means of evaluation must be relevant. For example, if the auditor were to come to any valid conclusion as to the accuracy of an individual's work, he would more properly base his judgment upon the accuracy with which a certain sample of work was performed than upon a non-relevant factor, such as the time required to perform it. The means of evaluation must also be reliable. This means that there must be a high degree of correlation between the type of work evaluated and the type of work used in establishing standards of efficient performance.

Evaluation procedures must be free from bias. The internal auditor is trained to be objective in his thinking. Moreover, his contacts with operating employees are more casual than those of line supervisors, for example, and it is consequently much easier for his judgments to be unbiased. In his contacts with employees, however, the auditor should be careful never to assume an attitude of superiority.

Finally, evaluation procedures must be practicable. There must be definite limits to the amount of time that can be spent and the amount of disturbance to operating routines. Here too, the auditor has a distinct advantage, for employees expect a certain amount of interruption during the course of an audit and will not be unduly disturbed by the auditor's presence. In most cases the additional time required by the auditor to increase the scope of his audit to include personnel evaluation will be slight.

The means by which employee performance may be measured are (1) determination of knowledge or understanding, (2) review of performance records, and (3) evaluation by observation.

The first method is widely used by line supervisors and by staff personnel engaged in systems work. The determination of knowledge or understanding of a certain job can be made by having the employee explain why a certain job is being done and how it should be performed, or by having the employee write out the answers to questions designed to test his knowledge of the job. This method can be used to advantage by the auditor when in the course of an audit he has occasion to question an employee about some of the details of his work.

The second method, review of performance records, can be used in cases where the work performed by an employee results in records which reflect his performance in terms of output. This method is used most commonly by auditors in evaluating personnel efficiency since they are already concerned with the records in connection with the major objectives of their audit. Although that type of evaluation is performed by nearly every auditor, its significance in many cases is overlooked because the auditor may be solely concerned with the accounting aspects of the work he is reviewing. It is quite likely that the auditor is subconsciously evaluating the employee but fails to give the matter any consideration because he does not recognize that it is a proper phase of his audit. The auditor should realize that management is concerned not only with internal controls but equally with personnel efficiency.

The third method, evaluation by observation, is in all probability too often neglected by auditors. However, in any instance where the employee's work does not leave a record of his performance, observation is the best means available to the auditor to determine whether employee performance is adequate.

Efficiency factors

As I indicated before, there is a very close relationship between personnel efficiency and operational performance. For this reason, in evaluating personnel, the auditor must also give consideration to the factors which are necessary to obtain efficient operating performance. These factors would include office and plant facilities and office and plant layout. They are by no means the only factors involved. Company policies and procedures are also important factors.

Facilities in its broad sense means the "tools" with which employees work. In any audit, an auditor should never take for granted the method by which an operation is being performed. He should always be alert to detect any situation where the productive effort of employees is being hampered by inadequate working facilities.

The auditor should give much the same consideration to office and plant layout as he gave to facilities in evaluating operating performance. Improper placement of office machines, files, desks, storeroom bins, and other facilities can result in a low level of operating per-

formance. In some instances the improper placement of facilities may be fairly obvious. But in other instances the auditor must spend considerable time in observing the flow of work in order to determine whether improvements can be made in layout which would result in higher productivity.

In one of our recent inventory audits, we came across a situation which illustrates how an auditor can use effectively the principles for evaluating personnel and operating performance to make improvements in operating efficiency which would not have been possible if the auditor had confined his activities to the mere accounting aspects of the audit.

It was noted that in one storeroom the storekeeper was having difficulty in maintaining his accounting records properly. The auditor reviewed the storeroom accounting records, observed the manner in which the storekeeper performed his work, questioned him concerning some of the details of the procedures he was supposed to be following, and reviewed the storeroom facilities and layout, and the general housekeeping practices. As a result of this study, the auditor recommended additional training for the storekeeper and additional personnel for the storeroom since part of the storekeeper's difficulties was due to the volume of work assigned him. The auditor also recommended a change in the storeroom layout to promote greater efficiency and to provide more adequate protection of company materials. The auditor's recommendations were adopted by management and subsequent follow-up of this storekeeper showed a substantial improvement in his work.

My discussion of the evaluation of personnel and operating performance should not be considered conclusive. Rather, it was my intention to introduce the subject by touching only upon the major considerations and by indicating some of the basic principles involved. I am sure that if you include this phase of auditing in your program you will enhance your position as an auditor by rendering an additional constructive service to your management.

Training ground for management personnel

By E. R. MELLON

Washington Gas Light Co.
Washington, D. C.

A few years ago I needed an executive assistant. A review of personnel in the department revealed that we had no one who we felt was ready for the job. I then went to the personnel department with my problem and was informed that there was no one in the "Management Training Program" far enough along to be considered. They recommended that I interview several men from other departments who were considered eligible for promotion.

Among the group was a young man from our internal audit department. During the interview, it became apparent that this young man, with relatively few years' service, had an extremely keen understanding of the company's operations, policies and problems. In answer to my question as to whether he had gone through the "Management Training Program" he said, "no—all that I know about the company was learned in the audit department."

He then explained that the audit program took him into every department of the company and required an understanding of all company policies and procedures. He got the job and his management concept continues to impress me.

As a result of this experience, I realized that we had completely overlooked a very important training medium. Although a short tour of duty in the audit department has always been included as a part of the "Management Training Program," none of us were aware that men working in this department were being trained in a manner practically parallel to that of the planned program, and in some ways superior to it. Since that time the audit department has been recognized as a source of trained personnel. We now rely on it to train and supply a portion of our management personnel needs. It also has been found expedient to assign some of our operating management personnel to the audit department for the purpose of increasing their knowledge of other departments and over-all company policies.

It has been our experience that an individual well trained in the audit department considers his problems and makes his decisions intelligently in the light of their effect on the operations of the organization as a whole.

I am sure no one feels that an audit unit could or should take on any major part of a management training program. At the same time, it would be shortsighted to overlook the fact that men developed through the audit medium can be as well prepared for advancement as those developed in formal programs. A *good* internal audit department is a source of *good* management personnel. Of course, in order to render this training service, we must have a comprehensive, well administered program, we must select our men with great care. In other words, we must render a top grade service in all respects.

No doubt some of us should ask ourselves if we are doing our jobs sufficiently well to render this training service. Perhaps an appraisal of our operations will reveal that we are merely using our personnel—not developing them. If such is the case, we may as well forget any training ideas until we get our house in order. In my opinion the caliber of men produced in the audit department is a good yardstick to use in measuring the job that is being done. A good program, emphasizing evaluation and constructive appraisal of over-all company operations, automatically develops good men.

The head of the audit department is proud of the fact that his men are constantly in demand throughout the company, and that a significant number of men in the executive level received their basic training in that department. They sometimes experience a fairly high turnover in a year as a result of the training and advance- *(Continued on page 41)*

Round-table discloses that problems of industrial customers must be met on individual basis

NEGA panel studies conversion

One of the most important phases facing a gas company converting from manufactured gas to natural gas is that of the industrial customer. The conversion problems in this field are as numerous as the plants and products being manufactured. Each industrial customer has his own production problems and the conversion organization in cooperation with the gas company must meet them fully on a wide variety of gas-fired processing equipment. There is no set rule for this type of conversion. Each application must be done as a separate job to meet the particular production situation.

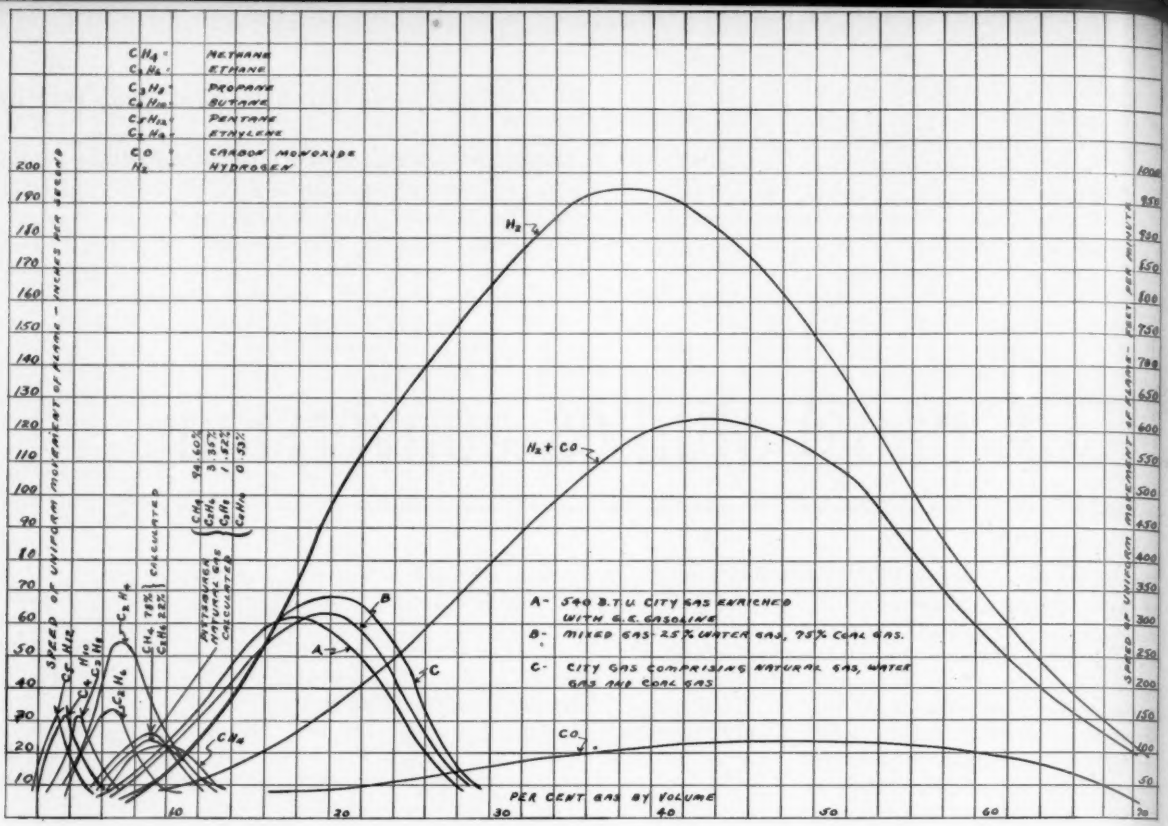
With natural gas scheduled to be available in New England the latter part of this year and early in 1952, some 50 companies now on manufactured gas are already formulating their conversion plans. In order to acquaint themselves with some of the problems of conversion, the New England Gas Association held meetings of their industrial and commercial men recently at which many of these problems were explained.

The meeting of the Industrial Sales and Engineering Group took the form of a round-table discussion panel. A set of prepared questions was directed to the different members of the panel by Chairman Alfred E. Green, Worcester Gas Light Company. Manufacturer representatives were selected for this discussion since they have had wide experience in the field of industrial applications and were particularly qualified to explain the conversion on various types of industrial burners and mixing systems. They were: Arthur D. Wilcox, vice-president in charge of combustion and furnaces, Eclipse Fuel Engineering Co. Rockford, Ill.; A. D. Koch, assistant sales manager, Standard Industrial Furnace Division, Surface Combustion Corp., Toledo, Ohio; Lawrence R. Foote, industrial specialist, Eastern District, Bryant Industrial Division, Affiliated Gas Equipment, Inc., Yonkers, New York.

During the morning session discussion was limited to specific answers to prepared questions which were classified under the following subject headings: (1) general, (2) atmospheric burners, (3) low pressure air systems, (4) high pressure gas, (5) premix systems, and (6) miscellaneous.

Mr. Wilcox gave a detailed explanation of the burning characteristics of various gases, covering rate of flame propagation, capacity changes, flame temperature and other factors that would influence the operation of industrial gas equipment. He went on further to discuss atmospheric burner units, where

Speakers at New England conversion meeting: (Left to right) A. D. Koch, Surface Combustion Corp.; Lawrence R. Foote, Affiliated Gas Equipment, Inc.; Chairman Alfred E. Green, Worcester, and Arthur D. Wilcox, Eclipse Fuel Engineering Company



Speed of uniform movement of flame in a gas air mixture in a one inch tube (exactly 2:5 centimeters). The author, Arthur D. Wilcox, Rockford, Ill., gave the NEGA Sales and Engineering Group a detailed explanation of the burning characteristics of various gases

only low pressure gas was being used and such details as relative port loading and injector size, for both manufactured and natural gas. He pointed out that reduced capacities would be encountered in many burner installations if no changes were made in port drilling or injector size.

Low pressure air and gas systems were discussed by Mr. Wilcox. He stated that changes in burner tuyeres require lengthening in many cases, and changes in proportional mixers require a reduction in the gas orifice adjustment and sizes of zero governors for various applications.

Various points were discussed relating to high pressure burner applications through the use of high pressure injectors. It was brought out that there would be a change in developed mixer pressure for manufactured and natural gas, also the possibility of a required change to a low pressure gas and air system. It was also brought out that a governor change would be required on premix machines in most instances.

Another reason for an accurate and thorough survey was stressed by Al Koch. In many instances considerable changes will have to be made in burner equipment necessitating plant shut-down possibly for days, in order to make the needed changes. As an example, Mr. Koch brought out that in the case of tunnel burners set in refractory walls it would be necessary to lengthen the tunnel for natural gas to burn satisfactorily. This would require moving the burner back and supporting it with a fixture attached to the outside of the furnace. Refractory brickwork would have to be filled in. Some furnaces have burners under a refractory hearth which would have to be removed in order to get at the burners. As it is usually impossible to remove these hearths without destroying them, new hearth material would have to be installed after the *(Continued on page 46)*

A.G.A. names commercial cooking representative

AMERICAN GAS ASSOCIATION has appointed Hayes S. Walter to take over the promotional work done by the director of commercial gas cooking promotion, John J. Bourke, before he was recalled by the Air Force last fall.

Mr. Walter will be commercial gas cooking representative working out of the A. G. A. office in New York. He will work with affiliated associations in the commercial cooking field, directly with headquarters of national chain organizations, and with and for the commercial gas sales and promotional departments of member companies.

Mr. Walter's background includes manufacturing, advertising and sales management experience. He attended Colorado College where he majored in business administration and economics.

His first work was in advertising as space salesman, copy writer and account executive. After that, for 13 years he was with Star Manufacturing Company in St. Louis, Mo., manufacturers of gas and electric counter appliances. Later he was in business in Colorado as partner in Walter & Carrell Manufacturing Company which also made gas and electric counter appliances. Mr. Walter's most recent connection was with Ard Manufacturing Co., Inc. in Evansville, Ind., where he acted as manager of the commercial cooking equipment division of that concern.

H. S. Walter

Cincinnati company adapts galvanic anodes to underside of large oil tank bottom

Above-ground cathodic protection

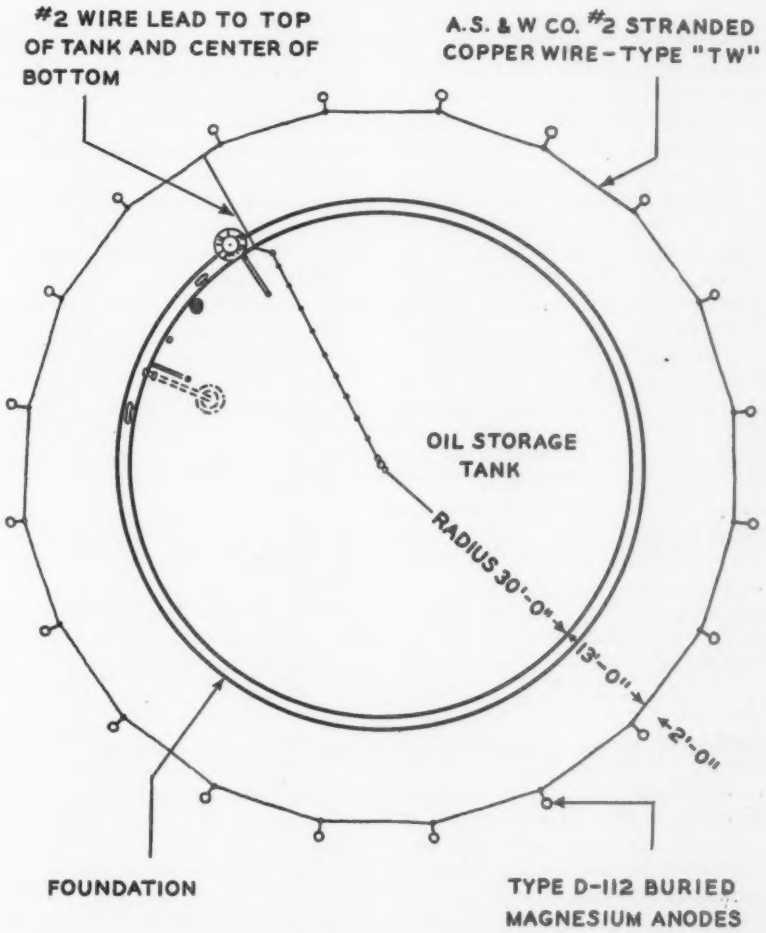
• Cathodic protection of underground structures has become common practice. Here, however, is a description of one of the first known successful applications of cathodic protection to above-ground structures. This article was written especially for the A. G. A. Monthly and submitted by the Editorial Committee of the Operating Section, Jesse S. Yeaw, Rochester Gas & Electric Corp., chairman. The material is published with the hope that it will suggest new methods and refinements for mitigating corrosion of above-ground structures.

By W. J. SCHREINER*

Chairman, A. G. A. Subcommittee On Above Ground Corrosion Mitigation Practices

The one million gallon capacity oil tank of The Cincinnati Gas & Electric Company was constructed adjacent to the plant on the bank of the Ohio River. Located on land that is flooded every few years, the tank had to be protected by a concrete dike. Soil conditions and periodic floods make the tank bottoms susceptible to corrosion. Since this surface is virtually inaccessible, it was decided to install cathodic protection on the tank bottom when it was constructed.

The adaptation of galvanic anodes to the underside of tank bottoms furnishes a practical means of protecting such inaccessible surfaces. It is also an insurance against future deterioration with the attendant leakage and hazards. However, protection of such bottoms presents peculiar difficulties. If the bottoms are given a protective coating be-


#2 WIRE LEAD TO TOP OF TANK AND CENTER OF BOTTOM
A.S. & W CO. #2 STRANDED COPPER WIRE – TYPE "TW"
OIL STORAGE TANK
RADIUS 30'-0"
13'-0"
2'-0"
FOUNDATION
TYPE D-112 BURIED MAGNESIUM ANODES

A cathodic protective circuit is created by surrounding the tank with buried magnesium anodes, connecting each to a wire from which a lead runs to the top of the tank and then down through the middle to be attached to the geometric center of the floor

* Gas Engineer, The Cincinnati Gas & Electric Company.

fore assembly, welding or riveting operations damage the protection, and repairs underneath are difficult and unsatisfactory. Complete assembly of the bottom and later application of a protective coating involves raising the bottom on supports and lowering in place, which is difficult and expensive. Cathodic protection overcomes these construction problems, and is a simple, practical expedient.

The tank itself was 60 feet in diameter, and 48 feet high, with a cone type roof, and center column support and rafters. It was of all-welded construction, with seven courses made of ASTM, A-7 open-hearth steel plates, varying in thickness from ¼ inch to ½ inch. Plates ¼ inch thick and 72 inches wide were used on the bottom, with 7/16 inch sketchplates extending inside the shell at least one foot radially. The bottom sketch plates extended one inch beyond the outside edge of the weld attaching the bottom to the shell plate. Single full fillet lap welding was used for the bottom construction. The sketch plates were welded to form a smooth bearing for the shell plates. By these methods, all welding on the bottom was done on the top side only. Attachment between the bottom edge of the lowest course shell plate and the bottom sketch plate was made by fillet welding on both sides of the shell plate.

The foundation consisted of a coarse, crushed stone aggregate compacted in six five-inch layers. Screenings filled the interstices and the whole was covered with a one-inch layer of oiled sand, rolled to a smooth surface. A one-foot monolithic concrete foundation was built under the shell, with a three foot concrete pier under the center column. The concentrated load under the shell was 1,750 pounds per lineal foot, wth a 44,500 pound load concentrated on the center pier. Because of the nature of the construction, and the importance of the installation, protection of the bottom against corrosion by means of cathodic protection was selected.

This cathodic protection system consisted of 20 magnesium type anodes weighing 16 pounds each and buried 15 feet beyond the periphery of the tank bottom at a depth to allow complete and uniform current distribution.

Anodes were connected in a ring, using a No. 10 solid wire, having ampyrol (synthetic resin) insulation from the anode to a No. 2 stranded wire with the same type of insulation. The No. 2 wire was laid in a trench around the tank bottom and the No. 10 anode lead wires were connected to it by means of a split-bolt or Burndy connector.

Expanding type anode connectors were used to bond the wire to the anode. The connector is inserted in the steel core rod of the magnesium anode and held tight by the steel pin which is driven through the connector thus expanding it, causing a desirable contact. The No. 10 solid anode lead wire is then inserted in the end of the copper sleeve, which is crimped in place, completing the circuit. After the expanding type anode connector had been installed on the top of the anode, a hot "Bitumastic" pouring tar compound was applied, thus completely sealing and insulating the contacts.

The anode lead wires were brought to the ground surface above the anode and placed in curb box to facilitate future testing of the adequacy of protection. By measuring the potential of the tank bottom to the soil, the installation perodically can be checked and recorded.

After completion of the anode connections, the No. 2 trench wire was tapped and a single insulated No. 2/0 stranded wire was brought to the tank as shown in the accompanying illustration. The tank lead was attached to the geometric center of the tank bottom. This was accomplished by fastening the 2/0 wire to the side and top of the tank, insulated by 600 V. transformer bushings. On the top of the tank the wire was attached to the center supporting column, insulated from it, dropped down inside the tank, and brazed to the geometric center of the tank bottom.

It is believed that the cathodic protection added to this oil tank will completely protect the underside of the tank bottom. This is very important because of the location of the tank and the necessity of having the tank filled at all times so that the oil can be used for emergency purposes.

Setchell made secretary of Operating Section

J. STANFORD SETCHELL has been appointed secretary of the Operating Section, American Gas Association, effective immediately. Mr. Setchell has been serving as acting secretary of the Section since the retirement of A. Gordon King early this year.

The new secretary joined A.G.A. in October 1936 as assistant to the utilization engineer and in September 1940 was advanced to assistant utilization engineer. He returned to the A.G.A. Utilization Bureau in February 1946 after service with the Navy. During most of 1950 he served as assistant to the secretary of the Operating Section.

GAMA opens nationwide health campaign

A DRIVE against occupational illnesses has been instituted by GAMA. Higher standards of industrial hygiene and reduced illness-occasioned absenteeism are being sought, in an effort to increase effective manpower supply.

Personal cleanliness, attainable through the use of adequate hot water, will be emphasized in the drive. The total cost of illness each year in the United States is close to sixteen billions of dollars, the water heater division of GAMA estimates. Skin diseases account for 65 percent of all the occupational illnesses, with each case costing $200 on the average, half as compensation to the worker and the other half for medical care, adding up to a $50 million cost to the industry annually for skin care alone. Most of these cases are controllable by simple preventive measures, such as proper and ample use of soap and hot water, the GAMA heater division reports.

Through appliance dealers, the GAMA education program will show the importance of the development of the modern automatic gas water heater in taking the guesswork out of gauging proper hot water temperatures for various hygienic purposes. This campaign will stress that "every microbe known to man can be killed by hot water," provided proper temperature and adequate rinsing are employed and it will be aimed at development of higher standards of hygiene in the home and industry.

Conferees urged to intensify sales effort

Keynoter: Chairman W. D. Williams, Public Service Electric & Gas Co., welcoming delegates to the A. G. A. New York-New Jersey Regional Gas Sales Conference in Asbury Park

Dealer relations: Harold Zeamer, The Philadelphia Gas Works Co., describing need to get new tools and resharpen old ones for dealer work

Inherent advantages: A. B. Ritzenthaler, Tappan Stove Co., discussing some of the actions needed for the gas industry to keep the cooking load

Credit restrictions, higher costs of living, increased taxes and other deterrents already are bringing dealers' inventories to the highest level since the end of World War II. Appliance sales in May reversed their upward trend and were considerably below those in May, 1950. Shortages of steel and other materials can reduce appliance production in the last quarter of this year, but intensive sales effort will be needed to move even the lower volume of merchandise.

It was upon this serious note that the two-day New York-New Jersey Regional Sales Conference, sponsored by the Residential Gas Section, American Gas Association, was conducted at Asbury Park on June 18 and 19, 1951. From the opening talk by W. D. Williams, Public Service Gas & Electric Company, who welcomed the two hundred delegates, to the closing address by Cy Burg of the Iron Fireman Manufacturing Company, the need for increased promotion, bigger and better sales forces and powerful advertising campaigns was stressed.

H. Leigh Whitelaw, managing director, Gas Appliance Manufacturers Association, informed the delegates of the many activities carried on by GAMA. More than 95 percent of the gas appliances and gas equipment in use today were manufactured by GAMA members, he said. He pointed out that although 1950 was a record year in which over a million house-heaters, more than two million water heaters and over three million gas ranges sold, shipments of these appliances had begun to decline in May 1951. This fact highlights the need for additional sales effort by utilities and dealers.

When the Korean war scare buying subsided, dealers were left with the largest inventories in recent history. This was true not only of appliance but of almost all retail goods. Price slashing on many items was retarding sales of gas appliances and the picture was not one that warranted optimism.

Intensive competition in the sales of all goods in the market place today makes it necessary to seek out the means of offering the best possible service at the lowest possible cost, Harold Zeamer, The Philadelphia Gas Works Co., pointed out in his talk on dealer relations. Gas utility companies were faced with the necessity of promoting their fuel. Since the war, a new attitude has arisen on the need for dealer relations programs. Today there is an urgent need for getting new tools and resharpening old ones for effective dealer work. This effort should include anyone who might sell a gas appliance.

Pointing out that between 80 percent and 90 percent of the appliances used today are sold by dealers, Mr. Zeamer highlighted some of the threads used by his company to weave a good pattern for improving dealer relations. Demonstrations with dealers, plumbers, wholesalers, and department stores have worked successfully for his company and have helped widen the manpower needed for selling more gas appliances.

The Brooklyn Union Gas Company Players did an excellent job in demonstrating to "Mrs. Drudge," how the modern, automatic gas clothes dryer can relieve her of the great burden of wash day and save her money at the same time. Players in the skit were Edward J. Cantwell, Harold F. Coleman, Andrew J. Tomanek, Gladys Grossarth and—playing the part of "Mrs. Drudge" —Harold Coleman.

A. B. Ritzenthaler, Tappan Stove

Panel of executives answering questions on gas changeover: (Left to right) Moderator Christy Payne, Jr., The Peoples Natural Gas Co.; Robin D. McNeice, Public Service Electric & Gas Co.; Roger Gordon, Washington Gas Light Co.; Vernon Stanton, South Jersey Gas Light Co.

Co., told the delegates some of the things they could do to preserve the gas cooking load. He pointed out that gas has several inherent advantages that salesmen could learn by comparing cooking methods of gas and electric ranges. Since his company produces both types, he talked from a real knowledge of his subject.

He emphasized the advantages of the flexibility of the gas flame, also the visibility advantage where housewives can see and judge the increase in heat produced when turning up the gas flame. He advocated increased effort by gas utilities to install modern automatic gas ranges in schools, all the way from the primary grades through the home economics kitchens and laboratories in colleges. Last year more than three million gas ranges were *bought*, Mr. Ritzenthaler said, but not enough gas ranges were *sold*. Not enough effort was made to increase manpower for additional sales power. Gas utility companies should support those manufacturers who are doing most to supplement A. G. A. research work with creative effort at their own plants designed to make gas appliances more modern, more automatic and more efficient.

Robert N. Laux, Kings County Lighting Co., Brooklyn, N. Y., presided at the Tuesday session. H. Vinton Potter, coordinator of promotion, A. G. A., told the delegates of the promotional plans being formulated for 1952. He said that A. G. A. tries to pinpoint specific plans that local companies can adapt to their own needs. The Old Stove Round Up for this fall will feature a tie-in with Esther Williams, glamorous movie star who will be featured in a western picture "Texas Carnival" this fall. Several promotional tie-ins will be based on the cooperation of theatres that will show this picture.

For next year, plans are under way for a water heater campaign in the first quarter. A Spring Festival Campaign has been scheduled for the second quarter for ranges, househeating, air conditioning and incineration. Refrigeration will feature the third quarter campaign, with another Old Stove Roundup for the last quarter of 1952.

Advent of natural gas along the Atlantic seaboard is bringing many new problems for gas utilities that will utilize this clean, efficient fuel for the first time. Several of these problems were scrutinized and answered by a panel of experts comprised of utility executives who have been distributing natural gas, either for some years or who have recently changed over. Christy Payne, Jr., The Peoples Natural Gas Co., Pittsburgh, presided as moderator of the panel. He was supported by Robin D. McNeice, Public Service Gas & Electric Co., Newark; Roger Gordon, Washington Gas Light Co., and Vernon Stanton, South Jersey Gas Light Co., Atlantic City.

Panel members agreed that the fear of a shortage of natural gas that is frequently *(Continued on page 53)*

Brooklyn Union Gas Company Players demonstrating how automatic gas clothes dryer saves time and money for "Mrs. Drudge" (Left to right) Harold F. Coleman, Gladys Grossarth, Andrew J. Tomanek and Edward J. Cantwell in action scene

Industry news

Industrial gas firms adopt code of ethics

STANDARDS of performance and safety for industrial gas equipment have been established under a special "code of ethics" voluntarily adopted by designers and builders of more than 25,000 different types of gas equipment in the industrial field.

Significance of the new code was explained on June 8 by D. A. Campbell, chairman of the group, a division of Gas Appliance Manufacturers Association. Mr. Campbell emphasized that industrial gas equipment is designed only to the individual customer's order. Therefore, it has not been feasible to develop standards and to include these products under the approval requirements program as now established for other appliances and administered by the American Gas Association Laboratories.

"In the absence of official standards," Mr. Campbell stated, "each manufacturer pledging adherence to the self-imposed code indicates that he is conscious of his obligation to the public and to the industries he serves."

Members of the division, who make gas equipment used in automotive, metals, textile and other essential production have agreed to self-policing on the following terms:

(1) Product design based on sound engineering principles and proved research, and employment of superior workmanship and materials.

(2) Assignment of accurate and dependable input and output ratings to all products.

(3) Design and construction with a view to satisfactory product performance over a reasonable expected lifetime.

(4) Readiness to cooperate in the preparation and application of official standards, when and if promulgated by the American Standards Association.

(5) Application of highest standards of safety and durability to the selection of controls and accessories used in finished products.

(6) Furnishing of carefully prepared directions, wherever practicable, to assist installers and users.

The GAMA code, Mr. Campbell pointed out, further provides that, on presenting their qualifications, manufacturers of industrial gas equipment "shall make only such representations as are consistent with integrity and the highest standards of our industry, and shall scrupulously avoid false or misleading statements with respect to grade, quality, design, construction, or performance of our products."

The importance of a system of self-controls in the industry, Mr. Campbell said, is emphasized by the essentiality of gas equipment in defense as well as domestic manufacture. Uses of custom-built, gas-fired equipment, he said, range from production of glass three tenthousandths of an inch thick to fabrication of filters for physical removal of bacteria; from increasing the forgability of steel to quadrupling the drying speeds of printing inks.

In view of the controllability and adaptability of the gas flame, there is no successful substitute for the equipment whose productions now will be governed by the industry's own code, Mr. Campbell added.

Personnel session for '51 A.G.A. convention

THE A.G.A. Midwest and Great Lakes Personnel Conferences at a joint meeting held in Kansas City, Missouri, on June 8, agreed to cooperate with the A.G.A. Personnel Committee in sponsoring an industrial relations session at the 1951 Annual Convention of the American Gas Association in St. Louis, Mo., October 15 to 17. Chairman Harold F. Taylor of the Employee Relations Group of the Southern Gas Association reported a belief that his group would join the others in sponsoring the proposed session at the Convention.

About sixty gas company personnel executives attended the joint session with J. T. Innis, vice-president of the Northern Natural Gas Company, and chairman, A.G.A. Midwest Personnel Conference, presiding at the opening session. The meeting was addressed by Dwight S. Sargent, personnel director, Consolidated Edison Company of New York, and chairman, A.G.A. Personnel Committee; Norman D. Bradley, The East Ohio Gas Company, and chairman, A.G.A. Great Lakes Personnel Conference; and Kurwin R. Boyes, secretary of A.G.A. Mr. Taylor, Oklahoma Natural Gas Company, representing the Southern Gas Association, also spoke.

Mr. Innis in opening the joint meeting pointed out that the conference offered the opportunity for personnel executives throughout the industry to become better acquainted with each other and to report and discuss developments. Mr. Sargent outlined the personnel activities of the American Gas Association and emphasized the strong need for a close exchange of information in this field. Mr. Boyes, convention manager of A.G.A., outlined convention plans with particular stress on the proposed industrial relations session.

Gas companies expand advertising budgets

GAS UTILITY COMPANIES devoted more of their gross revenue to advertising in 1950 than did electric or combination companies. This is but one of several significant facts in the fifth annual report on Utility Advertising Expenditures issued by Public Utilities Advertising Association under the chairmanship of William B. Hewson, assistant vice-president, The Brooklyn Union Gas Co., and retiring President of PUAA. The report is based on a questionnaire returned by 177 gas and electric utilities. Approximately 58 percent of all electric and 72 percent of all gas users in the United States are represented by reporting companies.

Total advertising expenditures when broken down as a percentage of gross revenue, show that gas utilities led the field with 0.77 percent, as against 0.59 percent for electric utilities and 0.58 percent for combination companies. However, in an analysis of advertising expenditures per customer, gas companies lagged 0.14 percent behind electric and 0.02 percent behind the average of all companies reporting.

More money was spent for newspaper advertising than for any other medium. Gas companies devoted 36.7 percent of their budget to this advertising, as against 35.1 percent for electric utilities and 33.1 percent for combination companies.

The report also shows that gas companies spent five percent of their advertising budget for television whereas electric utilities spent 3.7 percent. On the other hand, electric utilities spent 9.3 percent for radio and gas companies, 7.1 percent. The report also revealed an estimated 3.7 percent increase in advertising expenditures for 1951 over 1950, with gas companies indicating the largest expected increase, five percent. Appliance sales advertising will get slightly less attention in 1951 than in 1950. Institutional and promotional budgets will be larger.

Ohio Fuel employees honored for safety record

THE AMERICAN GAS ASSOCIATION'S safety merit award was presented recently to the Toledo district of The Ohio Fuel Gas Company in recognition of two million consecutive manhours worked without a disabling injury.

R. C. Kadel, Columbus, safety director for the company, made the award on behalf of A. G. A. at a safety appreciation dinner honoring employees. It was accepted by I. A. Ludwig, vice-president and Toledo District manager. P. A. Alberty, Columbus, retired former safety director and secretary of the firm, was the principal speaker. He traced the modern safety history of Ohio Fuel from 1928, when deaths averaged six a year, to the present time when the company has the best safety record in the nation of any similar organization.

Mr. Ludwig noted that the last serious lost-time accident occurred back on March 11, 1948. A similar record of two million hours without serious injury was achieved between 1938 and February 1940 in the Toledo district.

Utility accounting described in new book

Reviewed by Harold H. Scaff, *vice-president, Ebasco Services Incorporated, and member of the A. G. A. Accounting Section Managing Committee*

TO those both in and out of the public utility business who seek an understanding of all of the phases of utility operations where accounting, either directly or indirectly, is involved, the material in this book is indispensable. Professor Herbert B. Dorau, in pointing up the great need that exists for this book, states in the foreword, "It seems strange indeed that a function as important as public utility accounting should not have found organized and comprehensive expression at an earlier date . . . for the student of the subject, . . . and for the practitioner who seeks an organized crystallization of what was known and thought, no medium has to my knowledge existed prior to the publication of this volume. That it fills a long felt want and a substantial need is undoubtedly obvious to all who have had to deal with the many difficult and involved problems presented in accounting for public utilities."

While the title of the book is broad, it could properly have been extended to indicate that the economic implications of accounting, as well as the accounting itself, are thoroughly covered. Wherever the need exists, the economics of a subject are discussed in detail to give a comprehensive understanding.

The first 50 pages or more of the volume are devoted to background material necessary to comprehend fully the circumstances under which accounting must be carried on in the public utility field in order to accord with the peculiar conditions under which those industries are required to conduct their business. This is particularly helpful to a better understanding of why certain things have to be done certain ways in the public utilities industries.

Throughout the book the effort to provide a full understanding of these peculiarities continues. Chapter 7, for example, in dwelling at length on the determination of periodic income embraces a complete understanding of that subject by discussing such matters as the period convention, distinction between expenses and disbursement, expenditure and cost, cost and expense, and monetary vs. real income, which is of particular significance today. Many other instances of detailed treatment serve to assure a more comprehensive view of public utility accounting.

Fortunately for those who are seeking broader light into the field of public utility accounting, the volume goes far beyond the mere "debit and credit" aspects of accounting. Such subjects as indirect construction costs, original cost, depreciation, taxes, and others, all of which have an intimate bearing on the overall accounting picture of the utility of today, are discussed in great detail. Methods and procedures are likewise most adequately treated and in this instance, the volume does not stop at those methods and procedures directly related to ascertaining income account and balance sheet results, but it explores such fields as budgetary control, audits, departmental organization, and reports and statements, all of which are vital to public utility management of today.

Typical of the completeness with which the subjects are pursued in the volume is the treatment given utility plant. This subject is first referred to indirectly in several of the earlier chapters and is then covered completely in Chapter 10 through a discussion of background material to give a proper understanding of the significance of utility plant accounting in the public utility industry. Following this, to assure that utility plant accounting is examined from as many different angles as possible, work order systems are comprehensively studied in Chapter 11, overhead construction costs in Chapter 12, continuing property records in Chapter 13, and original cost in Chapter 14. Other features which have a bearing on utility plant accounting are covered in Chapters 15 and 16 on depreciation and Chapter 26 on budgetary control, which reviews among other things the construction budget—a vital part of the systematic planning of the physical plant of the utility enterprise.

As valuable as this book will be to accounting personnel, they are not the only ones who can benefit substantially from it. Every other group interested in determining accounting techniques, as well as the relationship of accounting to other phases of the business, will likewise derive considerable benefit. Experienced utility accountants will find in this volume a convenient and rich source of reference material on occasional problems. For purposes of training and developing utility accounting personnel, the book answers an urgent need for which there is a wide demand.

The authors are eminently qualified for the task which they undertook of producing the first comprehensive volume on public utility accounting. Dr. Foster is a nationally known consultant on public utility economics and a lecturer on public utilities in the Graduate School of Business Administration, New York University. Dr. Rodey is an outstanding leader in the public utility accounting field and is a certified public accountant, attorney and counsellor at law, a licensed professional engineer in the State of New York, and a lecturer on public utilities in the School of Commerce, Accounts and Finance, New York University. The broad coverage of accounting as well as economics is the result of the combined thinking of the public utility accountant and the public utility economist. Much of the outstanding value of this volume results from this ideal combination. It is with a great deal of pleasure that I extend congratulations to them for the great contribution that they have made to the public utility industries.

PUBLIC UTILITY ACCOUNTING, *By Dr. J. Rhoads Foster, and Bernard S. Rodey, Jr. 669 pages. Cloth bound. Published by Prentice-Hall, Inc., 70 Fifth Avenue, New York, N. Y. $10.*

Billfold card gives employees handy facts

BILLFOLD CARD

EMPLOYEES HANDY DATA

Northern Natural Gas Company

Information Based on Year End 1950

Full Time Regular Employees			1603
Northern	1425	Female	175
Peoples	178	Office	343
Male	1428	Field	1260
Consolidated Gross Property Account, $166,309,098			
Gross 1950 Additions to Property			$50,591,880
Northern			$49,902,802
Peoples			$ 689,078
Number of Utility Customers			27
Market Area—Five States of Iowa, Nebraska, Minnesota, South Dakota and Kansas.			
Number of Meters Attached to System			613,839
Number of Heating Customers			297,418
Number of Communities Served			229
Population Served			2,077,795
Average Gas Rate per MCF			17 cents
Yearly Gas Sales in MCF			167,286,347
Operating Revenue			$32,786,978
Net Income			$5,837,906
Earnings Per Share			$2.13
Dividends Per Share			$1.80
Daily Pipeline Capacity in cu. ft.			600,000,000
Miles of Pipeline			6176
Tons of Steel in Pipelines			591,000
Number of Compressor Stations			23
Installed Compressor Horsepower			183,360
Number of gas wells attached to system			1,133
Northern			253
Others			880

(OVER)

Acres of Leaseholds			1,151,077
Under Gas Purchase Contracts			758,735
Company-Owned			392,342
Total Gas Reserves in cubic feet			5.56 trillion
Shares of Common Stock Outstanding			2,740,500
Number of Stockholders of Record			15,838
Largest Percent Owned by any one Stockholder of Record			2.9%
Stock Listing—New York Stock Exchange.			
Stock Transfer Agents: The U. S. National Bank of Omaha, Chemical Bank & Trust Company, New York.			
Stock Registrars: The Omaha National Bank, Central Hanover Bank & Trust Company, New York.			
Number of Directors			7
Burt Bay (Deceased January 31, 1951.)			
John Merriam		Farrar Newberry	
Hiram Carson		Mark Adams	
Max Miller		Guy Reed	
Incorporation Date			April 25, 1930
Service Awardees			641
5-Year—296		15-Year—130	
10-Year—195		20-Year—20	
Number of Company Airplanes			4
Three Single Engine			
One Twin Engine			
Number of Two Way Radios			207
Mobile			168
Dispatch Points			13
Fixed			26
Subsidiary Company: Peoples Natural Gas Company serves 88 communities.			

Front and back views above show variety of information on employee billfold card distributed by Northern Natural Gas Co., Omaha, Nebraska. Extra copies of this novel card are available from the company. Several other gas companies already are considering use of employee billfold cards

Human relations

● Science has given us the means either to exalt or degrade humanity—perhaps even to destroy civilization. A new generation must turn back to the basic law of human relations and devise a new science—to teach us the art of living.—*Harry F. Guggenheim, U. S. Air Services.*

Southern California opens new division offices

FORMAL CEREMONIES on June 8 marked the dedication of Southern California Gas Company's new $600,000 San Fernando Valley Division headquarters at 6640 Van Nuys Boulevard, Van Nuys. Highlights included a luncheon of civic and business leaders, a ribbon cutting ceremony, and a public open house. The new building was open for business for the first time on June 11.

The San Fernando Valley Division, fastest growing unit in the utility's system, was created late last year as a result of the tremendous growth of the valley. S. E. Critchfield, formerly superintendent of residential service in Los Angeles, was appointed division manager.

The headquarters building is a modern, two-story structure of brick, concrete and steel construction and contains nearly 38,000 square feet of floor space. A modern 185 seat auditorium is provided in the basement for meetings, cooking schools, and employee social gatherings. In addition, record storage space has been located in the basement area.

A four unit gas air conditioning system with 80-ton capacity supplies the building. A 60-horsepower boiler installation in a penthouse on the roof provides heat for both heating and cooling the facility.

The main floor contains a modern appliance display area, customers' payment counter, division manager's and district agent's offices, and units of three departments. On the second floor are additional offices, a large conference room, and a canteen for employees. Adjacent to the building is a paved parking area for company vehicles.

New $600,000 San Fernando Valley Division headquarters of Southern California Gas Company at Van Nuys which was dedicated on June 8. The structure will house 123 employees of the division

Re-name Columbia subsidiary

COLUMBIA ENGINEERING CORPORATION, the subsidiary service company of The Columbia Gas System, Inc., has changed its name to Columbia Gas System Service Corporation. In announcing the change, Stuart M. Crocker, chairman, explained that it was made to more clearly reflect the function of the service company.

Statistics of the Month

• **Utility gas sales**—April, 4,473 million therms, a decline of 5.7% from the 4,746 million therms sold in March, but an increase of 16.7% over 3,833 million therms sold in April, 1950.

—Twelve months ending April 30, 1951, 38,616 million therms, an advance of 17.0% over 32,998 million therms sold in comparable period a year earlier.

• **Automatic gas water heater shipments**—April, preliminary, 209,100, down 6.3% from March final figure of 223,300; up 18.5% from 176,400 units shipped April, 1950. May, preliminary, 168,800 units, down 19.2% from April preliminary.

• **Electric storage water heater shipments**—April, 91,300 units, down 15.9% from 108,600 shipped in March; but up 19.8% from 76,200 units shipped, April 1950.

Canfield elected president of PUAA

New officers of Public Utilities Advertising Association during recent PUAA convention in New York: (Left to right) Third vice-president—C. Fred Westin, Public Service Electric & Gas Co., Newark, N. J.; President—John E. Canfield, Wisconsin Power and Light Co.; Second vice-president—Walter G. Heren, Union Electric Co., St. Louis, Mo.; Secretary—George G. Hanel, The Connecticut Light and Power Co., Waterbury, Conn.; First vice-president—Paul L. Penfield, The Detroit Edison Co., Detroit, Mich.; Treasurer—Meade Schenck, Interstate Power Co., Dubuque, Iowa

• **Gas-fired central heating equipment**—March, 61,700 units, up 12.2% from 55,000 in February, but 28.4% below 86,200 shipped March 1950. (Breakdown: 41,200 gas-fired furnaces, 7,500 gas-fired boilers and 13,000 gas conversion burners.)

—April preliminary, 39,900 units.

—May preliminary, 37,000 units.

• **Oil-fired burners**—January through May, 1951, 187,381 installations, down 8.1% from 203,900 installations during same period last year.

• **Gas range shipments**—April, preliminary, 249,600 units, down 13.9% from 289,800 shipped in March; up 4.4% from 239,100 units shipped April, 1950.

—May, preliminary, 172,700 units.

• **Electric ranges**—April, 140,300 units, down 22.1% from 185,400 units in March; down 7.7% from 152,000 in April, 1950.

Tennessee paves way for adoption of standard codes

BY ACTION of its 1951 State legislature, Tennessee becomes the seventeenth state to permit cities and towns to adopt modern national standards into their local codes by reference. The State has repealed an antiquated act which had required communities to publish, as classified advertising or by similar means, any proposed code in its entirety.

Through this recent legislative enactment it becomes possible for the various cities in Tennessee to adopt the nationally recognized codes of the gas industry, at nominal cost. This is in contrast to the old expensive practices which practically precluded modernization of building codes and ordinances. Passage of the act had the support of the Tennessee Municipal League, the University of Tennessee and the State Chapter of Architects. The support of the enactment of this act centered in the Committee of Fifteen, which these organizations appointed.

The new A.G.A.-sponsored standards which can now be readily adopted by Tennessee communities are ASA Z21.8, "Installation of Domestic Gas Conversion Burners;" Z21-30, "Installation of Gas Piping and Gas Appliances in Buildings;" Z21.33, "Installation of Gas Equipment in Large Boilers."

Similar enabling acts have been passed by: Alabama, California, Idaho, Illinois, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New Mexico, North Dakota, Oregon, Pennsylvania, South Dakota, Utah and Washington.

Gas companies in states that have not yet passed enabling acts, and which are desirous of securing adoption of the new A.G.A.-American Standards Associations standards without expensive printing costs, may obtain further information by writing A.G.A. headquarters.

Industry development credited to private initiative

THE DISCOVERY and development of uses of natural gas and petroleum are an outstanding instance of the "remarkable effectiveness of American private business." This statement was made by D. A. Hulcy, president, Lone Star Gas Co., of the American Gas Association and of the U. S. Chamber of Commerce, in a welcoming address before the Oil and Gas Power Division conference of the American Society of Mechanical Engineers. The conference was held in Dallas from June 25 to 29, 1951.

Mr. Hulcy explained that the rising total of known gas reserves "shows what private business can do, and . . . provides one of the more striking examples of the phenomenal achievements made possible by human initiative, energy and resourcefulness exercised in the atmosphere of our American system. Here we have the picture of a great segment of American business proceeding under the guidance and through the efforts of many individuals, with each of these individuals being impelled by the fundamental and laudable desire for self improvement.

"How much petroleum remains to be discovered may not be known with accuracy; but of one thing we may be absolutely sure —the best possible way for additional petroleum to be found and made available for use is for the great institution of American private business to be permitted to operate under the tremendous urge of human desires and human needs."

Detail steps of the commercial application, and the economics of power production of the modern gas engine were discussed by R. L. Boyer and W. R. Crooks of The Cooper-Bessemer Corporation, Mt. Vernon, Ohio. Their paper covered the larger sizes of heavy-duty engines using gas for fuel. For the most part, they described spark ignited engines, though gas-diesel or dual fuel engines with pilot ignition were also covered. Natural gas was the basic fuel considered, with propane and butane gases being briefly discussed.

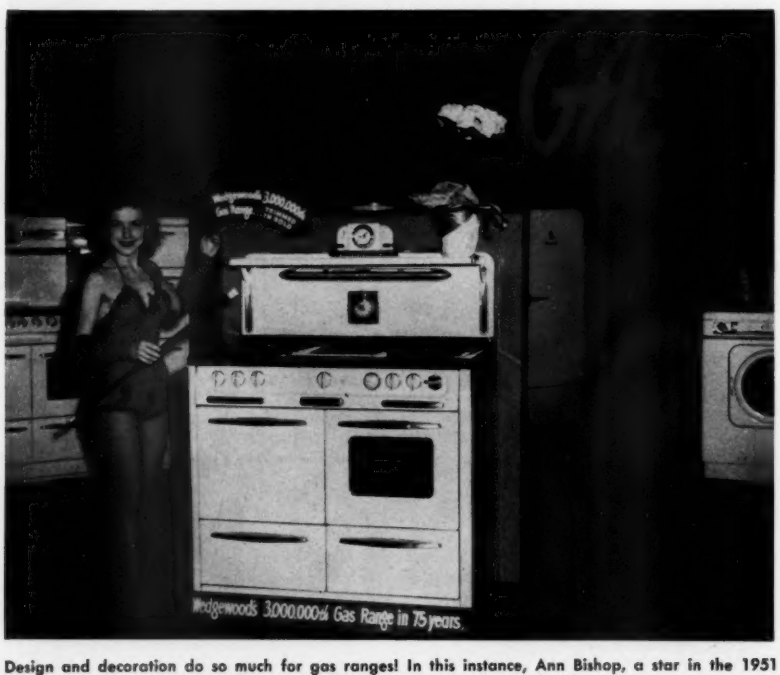
Experience with a direct connected engine driven compressor as a power generator was described by J. N. MacKendrick, vice-president, G. H. Bollman, project engineer, and C A. Chamberlain, project engineer of Clark Brothers Co., Olean, N. Y. "Our experience with this unit leads us to believe that a crank type gas generator unit could be built approaching the efficiency of a good diesel engine and it could have practical application driving high speed machinery," they concluded.

Water Cooling Equipment for Diesel and Gas Engines was the subject of a paper by H. E. Degler of the Marley Company, Kansas City, Kansas. It was Mr. Degler's conclusion that "The anticipated performance, operative features and ease of maintenance of a proposed installation must be completely analyzed, and the final selection frequently becomes a matter of engineering compromise and personal preference."

R. L. Leadbetter, Burgess-Manning Co., Dallas, discussed the design of the exhaust snubber of gas engines. "The exhaust snubber must withstand the explosion forces involved in gas engine service," he stated, "but there is a limit to permissible weight of the unit."

Studies of damages to exhaust pipes "suggests that explosion relief devices should be located near the ends of the cylinder comprising the first section of the snubber. . . . There must be continuous weld around the periphery of the dividing flanges to prevent the shell being torn away. . . . The longitudinal seam along the inner shell must be continuously and carefully welded. The second shell is then tightly wrapped over the inner shell and a seam welded. With this combination the seams can never be torn apart by an explosion. One reinforces the other."

As one glamorous model to another



Design and decoration do so much for gas ranges! In this instance, Ann Bishop, a star in the 1951 Portland, Oregon, Home Show, poses with Wedgewood's three-millionth gas range. Brought to Portland for the occasion, this gold trimmed commemorative model was featured in Portland Gas & Coke Company's exhibit. The show was reported as having been the "biggest and best yet"

Canadian Gas Association names officers for 1951-52

TWO-HUNDRED delegates attended the 44th annual convention of the Canadian Gas Association, June 18-21, at the Bigwin Inn, Lake of Bays, Ontario. Association president, Hugh G. Smith, The Consumers' Gas Company of Toronto, presided at all sessions.

Group discussions, a new feature of Canadian Gas Association convention programs, occupied the first afternoon. These discussions aroused such marked interest that each group voted to continue them during the final morning of the convention.

R. M. Perkins of the Union Gas Company of Canada, Ltd., Windsor, Ontario, was elected association president for 1951-52. For first vice-president, association members chose R. Latreille, Quebec Hydro-Electric Commission, Montreal, Quebec. D. K. Yorath, Northwestern Utilities, Ltd., Edmonton, Alberta, was named second vice-president. W. A. Higgins was re-elected executive secretary and treasurer.

To serve on the executive committee, association members named: F. R. Palin, Union Gas Company of Canada, Ltd., Chatham, Ontario; H. W. Durgy, Dominion Natural Gas Co., Ltd., St. Catharines, Ontario; E. H. Rohrer, British Columbia Electric Company, Ltd., Vancouver, B. C.; C. H. Lutz, Dominion Natural Gas Co., Ltd., Dunnville, Ontario; F. W. Satchwill, Winnipeg Electric Co., Winnipeg, Manitoba; R. C. McPherson, Canadian Western Natural Gas Co., Ltd., Calgary, Alberta; T. E. Cross, Quebec Hydro-Electric Commission, Montreal, Quebec; H. G. Smith, The Consumers' Gas Company of Toronto, Toronto, Ontario; W. R. Ward, United Gas and Fuel Company of Hamilton, Hamilton, Ontario.

Elected as executive members representing the Manufacturers' Section were Donald H. Thorburn, Gas Machinery Company of Canada, Ltd., Hamilton, Ontario and W. J. Gallagher, Moffats, Ltd. western Ontario.

The Time and Place Committee announced that the 1952 Convention of the Canadian Gas Association will be held in Quebec City, June 8-12, 1952.

Montana-Dakota acquires

MONTANA-DAKOTA UTILITIES COMpany, Minneapolis, will acquire and operate all the properties of the Billings Gas Company and Big Horn Gas Company, and part of the facilities of The Rocky Mountain Gas Company. Additional compressor facilities as well as 16 miles of line to interconnect its new facilities with the pipeline owned by Montana-Wyoming Pipe Line Company and operated by Montana-Dakota, will be built by the latter company. It will also build a compressor station of two 330-horsepower units, and dehydration facilities, in the Little Buffalo Basin Field. The Federal Power Commission has approved.

ECA marks technical aid

WILLIAM C. FOSTER, administrator of The Economic Cooperation Administration, has awarded a certificate of cooperation to H. Emerson Thomas and Associates, Inc., of Westfield, N. J., for assistance in giving technical aid to Western European countries under the ECA program. Through the assistance of H. Emerson Thomas and Associates, Inc., and other companies in the United States, stated Mr. Foster, most of the Marshall Plan countries are now producing considerably more than they did in prewar years.

Cooperation boosts Hartford school success

A New Freedom Gas Kitchen, created by bringing together the Florence gas range, Servel gas refrigerator, the Bendix gas dryer and the American kitchen, was a notable and highly effective aspect of the Cooking School staged by The Hartford Gas Company, May 17, in a local theatre. Over seven-hundred "students" paid 44 cents apiece to attend the school and to see the following feature picture. Charles N. Keeney, local dealer who tied in with the school, offered prizes to those who attended, but stipulated that the winners must come to his store to get their awards. He reported that excellent sales developed from this plan and that store traffic was heavy all through the following week. Alyce Salisbury, left, helped Mrs. Arra Sutton Mixter, The Hartford Gas Company's home service director, to conduct the 1951 cooking school

A.G.A. announces June '51 publications

LISTED HERE are publications released by American Gas Association during June 1951, up to the time of closing this issue of the MONTHLY. Information in parentheses indicates audiences for which each publication was designed.

Industrial and Commercial

● **Bound Volume of 25 Lectures Given at 1951 Industrial Gas School** (for industrial gas engineers and manufacturers of industrial gas equipment and their dealers). Available from A.G.A. headquarters, $5 a copy.

Laboratories

● **Research Bulletin No. 64—a Study of Thermocouple Type Elements for Automatic Ignition Systems** (for utilities, service men, manufacturers, installers). Available from A.G.A. Laboratories, $1 a copy. PAR.

● **Research Report No. 1176—Comparative Study of Various Methods of Cooking. Part I—Review and Analysis of Available Information** (for utilities and manufacturers). Available from A.G.A. Laboratories, $.75 a copy. PAR.

Operating

● **Reference Book on Instruments for Electrolysis, Corrosion and Cathodic Protection Testing** (for corrosion engineers). Prepared by Subcommittee on Instrumentation of the Corrosion Committee. Available from A.G.A. headquarters. $1.50 a copy.

Promotion

● **Gracious Living Portfolio** (promotional, advertising and sales managers). Available from Promotion Bureau, A.G.A. headquarters. $.25 a copy. PAR.

General

● **Monthly (April) and Quarterly Report of Gas Sales, 1951** (for sales managers, statisticians and librarians). Available from A.G.A. Bureau of Statistics. Free.

● **Accident Experience of the Gas Utility Industry, 1950** (for personnel and safety directors). Available from A.G.A. Bureau of Statistics. Free.

Court kills effort to block AEC gas line

THE U.S. Court of Appeals in Washington, D. C. has rejected an attempt by coal mine operators and coal and railway union officials to stop the building of a 172-mile pipeline to serve the Atomic Energy plant at Oak Ridge, Tennessee.

The Appeals Court upheld a Federal Power Commission order giving the authorization to East Tennessee Natural Gas Company.

Opposing the pipeline were the National Coal Association, an organization of bituminous coal mine owners and operators; the United Mine Workers Union and the Railway Labor Executives Assn., a group of executives from 21 railroad labor unions.

Their suit said displacement of coal by natural gas at Oak Ridge would result in annual loss of sales of 700,000 to 750,000 tons of coal and 130,000 man-days of work in the coal mines.

The court split over whether the union and coal owners had a right to contest the order. Judges Charles Fahy and David Bazelon said they did.

But Judge Bennett Champ Clark, in a blistering dissent, said:

"It must be remembered that no seller or producer of coal or any other fuel, or of railroads . . . has a vested right to force consumers to retain dependence on a fuel or a form of transportation in which they have lost confidence.

"If they lose business it is largely because of their own antics in creating frequent crisis, by way of strikes or threats of strikes, which leave the users at the mercy of their whims.

". . . it is folly to say that this vital defense effort shall be left to the tender mercies of the contending parties here with the strong possibility that at some crisis in our affairs this important security agency might be suddenly paralyzed."

Utility to advertise Philadelphia area

PHILADELPHIA ELECTRIC COMPANY has instituted a national advertising campaign to further the development and expansion of the Philadelphia area. The program is designed to tell the story of the area to people throughout the United States. Particular emphasis will be placed on the advantages of the port of Philadelphia, the second largest in the United States.

Announcing this campaign to civic and business leaders at a luncheon meeting, Board Chairman Horace P. Liversidge emphasized that this is not merely a campaign to bring new industries to Greater Philadelphia. Instead, he said, this is an activity to promote the advantages of the Philadelphia area as a good place to live and to work.

The first advertisement, in full color, appeared in the June 30 issue of *Saturday Evening Post*. Additional advertisements are scheduled for the July 1 issue of *Forbes Magazine*, July 9 *Time* and July 28 *Business Week*. Other ads will appear in *The New York Times* and *The Wall Street Journal* at as-yet-undetermined dates.

Proof required of damage from gas pipeline

FEAR of explosions or accidents cannot properly be claimed as damage to a property crossed by a new natural gas pipeline unless it can be proved that the fear has actually affected the market value of the parcel. This view was expressed on June 21 by Albert W. Lockyer, vice-president of the New York State Society of Real State Appraisers. Mr. Lockyer spoke at the opening of the annual convention of the New York State Society of Real Estate Boards. He also pointed out that prices that have been paid by natural gas line companies for easements have not necessarily provided any good indications of the true value of such easements, because in many cases they have been obtained for only nominal payments.

A short discussion centered on the major factors in making appraisals of rights of way. Mr. Lockyer added that in instances, if there also were benefits that accrued to a property as the result of an easement, such as a right of way for a power line or trunk sewer, such benefits could be deducted against any damages in computing the value of the easement.

He pointed out that the value of an easement itself plus the alleged damages to the balance of a parcel, could never exceed the fee ownership value of the parcel without the easement although some persons might seek compensation at such a rate.

What to read and where to find it

• **You, Traffic and Safety** (Consolidated Edison Company of N. Y.) Procedures for manhole and street excavation operations with a maximum of safety are presented in considerable detail. Elevation and plan drawings are used to indicate the proper positioning of safety devices for various types of operations and of traffic conditions.

• **Standards—Spearhead of Industrial Mobilization** (American Standards Association, 70 East 45th St., New York 17, price $1.00.) Papers presented at the First National Standardization Conference are reproduced, as a practical working guide for all organizations and individuals concerned with standards work.

• **Handling Hose and Ladders** (National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.)—A civil defense edition of a training manual for fire fighters, brings to the fire service in one volume a step-by-step pictorial description of accepted practices for handling fire hose and fire department ladders. Handy pocket size. 176 pages. $1.50 per copy.

Texas Gas asks expansion for defense

TEXAS GAS TRANSMISSION CORPORATION has asked Federal Power Commission approval of a 600-mile pipeline expansion. The expansion would furnish new supplies for the company's present customers in Louisiana, Arkansas, Mississippi, Tennessee, Kentucky, Indiana, eastern Illinois and Ohio. The company's petition states that the project would bring more natural gas to defense industries.

Support for the petition was given by officials of the Tennessee Valley Authority, in testimony before the Federal Power Commission. TVA would purchase 90 milion cubic feet of natural gas a day for use at a new steam generating plant at Johnsonville, Tennessee. They testified that the gas is urgently required to enable the agency to meet rapidly expanding defense production requirements.

Propane powers a plane, and at low cost

PROPANE entered another power field when Landrum L. Hughes of the A. O. Smith Corp. had his airplane equipped and licensed to use it as fuel. Recently he flew his Aeronca four-passenger sedan from Oklahoma City to the Liquified Gas Petroleum Association convention in Chicago. Fuel cost for his air trip was about $4, as compared with an estimated $15 had he used gasoline.

The 145-horsepower Continental engine of Mr. Hughes' plane is fitted with the same type LP-gas carburetion adapter that is marketed for farm tractors, buses, trucks and passenger cars. It is the only plane in the country licensed to use propane as fuel.

Ability

• Most any one will admit that he couldn't conduct a symphony, perform an appendectomy, or even run an automobile factory—but rarely do we find a man who doesn't think he can sing tenor or handle a big government job!
—*News & Views, General Motors Corporation*

Internal auditing

(Continued from page 28)

ment program through the audit department. Rather than consider turn-over a drawback, they point to it with pride and feel it is the best compliment they could receive. As a result of their success in training men and the unique position in which they find themselves, they have a long waiting list of good applicants for transfer to the audit department.

It is not unusual to have the former head of an operating unit assigned to the audit department for a period of time ranging from a few months to two or three years for the purpose of giving him a better understanding of the economic and inter-functional relationships of the over-all organization. Upon completion of the training period, he either is returned to his former position or advanced to one of greater responsibility. In either case, he is better equipped to handle the job effectively.

For several years my company has had a management development program designed to increase the knowledge of management personnel in the policies, departmental relationships, objectives, etc. of the company's operations. It has been my observation that men from the auditing department have a far better knowledge of these important aspects than most of the participants in the program. It isn't at all unusual for an auditor to have a better concept of a particular company policy than many of the department heads who administer some portions of it. I believe the reason for that is that an auditor, in testing adherence to a policy or procedure must, of necessity, explore all phases and correlate those aspects which apply to individual units or departments.

An example of this was brought to light in an examination of our Customers' Service Policy. One of our departments was operating under its interpretation of a portion of the policy, in a manner in direct conflict with the interpretation of another department. The auditor was able to clarify the situation for both departments because of his clear understanding of the over-all intent and purpose of the policy.

Consider some of the benefits to be derived if the audit department is recognized as an important part of the over-all company plan for training management personnel.

I. Benefits to the audit department

(a) More careful selection of personnel for the audit staff. Only those individuals with high potential or proved capabilities should be considered. A "poor" man cannot be satisfactorily trained, no matter how long he is in audit or any other kind of work.

(b) The quality of work and effectiveness of the audit program will improve if the standard of the employee is raised.

(c) The general understanding and appreciation of internal auditing will improve as the "trainees" move on to more responsible positions.

(d) The morale of the employees will be high potential or proved capabilities should department is a recognized source of qualified men for advancement.

(e) Personnel transferred from other branches of the company for training will benefit the department through their detailed experience with specific activities.

(f) The prestige and "management acceptance" will be improved as a result of this additional service rendered.

II. Benefits to the company

(a) The trainee in an audit department is essentially productive at all times.

(b) This additional source of trained personnel can be provided without incurring additional expense or requiring special plans.

(c) Training through auditing includes the major benefits of the formal management and executive training programs, based primarily on job rotation, plus certain additional benefits; such as:

(1) Better developed management concept as the result of economic and coordinated consideration of all policies and problems.
(2) Better understanding of accounting, which is beneficial to executives.
(3) Develops ability to get along with people. Few jobs require more tact or diplomacy than that of an internal auditor.
(4) Provides a flexible training medium. The training routine in an audit department can be adjusted to meet the needs of the individual more readily than in the formal programs.
(5) One of the main attributes of a successful man is the ability to be concise, to the point, and to differentiate between relevant and irrelevant. It would be difficult to find a better way of developing this than through the medium of report writing and audit conferences.

Now consider some of the negative points with respect to such a plan. There are some who feel that the audit department should have nothing to do with a training program because it would detract from the primary objective of rendering a constructive auditing service. They also feel the resultant turn-over would be detrimental.

The experience of many of the companies I have contacted on this subject, plus my own experience during the past two years, has convinced me that effective training can be done without affecting the auditing service. In each instance, the audit staff included a nucleus of experienced auditors to carry the bulk of the load and to assist in the development of the new men. In addition, the assignment schedule of each new man was made to fit into the regular audit program. Each employee released after the two- or three-year training period was replaced by a new man brought in for training purposes. Therefore, I believe it is fair to say that a training program can be worked out which will not conflict with the audit work and that turn-over presents no serious problem, if an appropriate ratio of inexperienced to experienced staff members is maintained.

Will not the auditing department produce more than its share of supervisors and other management personnel without establishing a training program? I think the very nature of our work compels us to answer in the affirmative *if* we have a well-rounded program, select our personnel carefully and if our departments have earned management's recognition as a source of trained personnel. Unfortunately some of us cannot say "yes" because our situations are deficient with respect to one or more of these elements.

In conclusion, we do not have to *establish* a training program to render this additional service. The service is a natural by-product of our work and presents a challenge to each of us and our companies to use it effectively.

New Robertshaw laboratory completed

The West Coast Research and Development Laboratory of the Robertshaw-Fulton Controls Company has occupied its new laboratory building near the Los Angeles Airport. Included in the new structure is a modern test kitchen where domestic gas appliances and accessories can be installed and operated under conditions duplicating actual home use. The laboratory is specially equipped for basic research, as well as the development of all types of controls and devices.

Columbia System announces staff promotions and appointments

SEVERAL ACTIVE A. G. A. members were among those recently promoted by Columbia Gas System, Inc., and its subsidiary service company, Columbia Engineering Corporation. Oliver S. Hagerman, a recent A. G. A. director, and formerly president of the Charleston Group of the Columbia System, was elected chairman of the board of that division. Alan A. Cullman, chairman of the A. G. A. Accounting Section, was elected to the newly created post of controller of Columbia Engineering.

At the same time, C. E. Loomis was elected vice-president of The Columbia Gas System, and of Columbia Engineering Corporation. He was formerly assistant vice-president of both companies.

E. D. Bivens, formerly treasurer of the two companies has been named vice-president and director of the Charleston (W. Va.) group companies of the system. Francis H. Crissman, formerly assistant treasurer of Columbia Gas, succeeds Mr. Bivens as treasurer, while continuing as assistant treasurer of Columbia Engineering. Charles H. Mann becomes treasurer of Columbia Engineering Corporation and assistant treasurer of the parent company. Mr. Mann is a member of the A. G. A. Taxation Accounting Committee. Morton Lewis was elected assistant treasurer of The Columbia Gas System.

John W. Partridge was elected president of The Charleston Group of the Columbia System, to fill the vacancy created by Mr. Hagerman's election to the chairmanship of the board of that group.

O. S. Hagerman

A. A. Cullman

C. E. Loomis

E. D. Bivens

F. H. Crissman

J. W. Partridge

E. R. Conner

J. S. Phillips

E. R. Conner, a member of the Rate Committee of A. G. A., moves from assistant vice-president to vice-president of Columbia Engineering Corporation. James S. Phillips, director of purchasing of that company, becomes vice-president. He is a member of the A. G. A. Materials and Supplies Committee.

Others named to new posts in Columbia Engineering Corporation were: Fred W. Batten, assistant vice-president; Leon M. Plasterer, assistant treasurer; Lawrence Vose, assistant treasurer; Albert V. Schwartz, assistant controller; and Harry C. Davies, assistant general auditor.

Mr. Loomis began his career with Columbia Gas System as a statistician in one of its operating companies. He was on the engineering staff of Columbia Engineering Corporation for a number of years and was named assistant vice-president of the parent corporation in May, 1950. He is a member of the Pipeline Flow Subcommittee of the Technical and Research Committee, Natural Gas Department, A. G. A.

Mr. Bivens joined The Ohio Fuel Gas Company in 1932. He became treasurer and a director of Columbia Engineering Corporation in 1945. Since 1947, he has also been treasurer of the parent corporation.

Mr. Crissman, who began as a bookkeeper in the Pittsburgh Group in 1930, did much of the work in integration proceedings before the Securities and Exchange Commission that resulted in Columbia's becoming exclusively a natural gas utility. He was named assistant treasurer of Columbia Engineering Corporation in 1947 and assistant treasurer of the parent company the following year.

Personal and otherwise

Adams named vice-president of Texas Gas

BENJAMIN C. ADAMS, JR., has been elected vice-president of Texas Gas Transmission Corp., Owensboro, Ky., in the company's gas supply department. He had been assistant to the executive vice-president of Texas Gas, since joining the company in 1950.

Mr. Adams entered the gas business in 1936, starting as assistant to the general superintendent of the Oklahoma Natural Gas Company. In 1942 he was called to Washington and made chief of the Natural Gas Section, Petroleum Administration for War. Upon return from Washington in 1944, he joined The Cities Service Gas Company, Oklahoma City, as assistant manager of operations. Subsequently he was made director and assistant president of the company. Later he resigned from Cities Service Gas to become an executive of the newly formed Trunkline Gas Supply Corp., Houston, Texas.

Mr. Adams is the son of B. C. Adams, Sr., president and general manager of The Gas Service Co., Kansas City, Mo., who has long been active in A. G. A.

Commonwealth names John

STUART W. JOHN, public utility rate consultant, has been appointed head of the rate department of Commonwealth Services, Inc. Mr. John has been active in utility rate matters since 1927. He was associated with Dallas Power & Light Company for 16 years and was head of that company's rate and economic research department in 1943, when he left for service in the Navy. Following that he joined the Ebasco Services organization in 1947.

Winn to manage port

JOHN J. WINN, manager of the Petersburg and Hopewell Gas Company, Petersburg, Virginia, leaves shortly to assume the post of manager of the Port of Portland, Oregon. Mr. Winn has been commercial manager of the Portland (Oregon) Gas and Coke Company and general manager of the Honolulu Gas Company, before assuming his present position in Petersburg, Virginia. He is a member of A. G. A.

Frome joins United Fuel

H. E. FROME, Zanesville (Ohio) distribution district industrial sales manager for The Ohio Fuel Gas Company, has been named industrial sales manager for The United Fuel Gas Company in Charleston, West Virginia. Richard L. Lang, industrial sales engineer in Ohio Fuel's Toledo district, will succeed Mr. Frome as distribution district industrial sales manager. Mr. Frome is a member of American Gas Association.

Ohio Fuel Gas makes top-level executive changes

EARL C. OVERBECK, president, The Ohio Fuel Gas Company, has been named chairman of the board of directors and chief executive officer. He succeeds C. I. Weaver, board chairman, who retired as executive officer on March 1, but who continues as a director. William N. Grinstead, vice-president and general manager, was elected president.

Allan W. Lundstrum, war-time deputy director of the gas division of the Office of War Utilities, was elected vice-president and general manager and a director. Mr. Lundstrum was a consulting engineer with Stewart Warner.

Mr. Overbeck started work with a predecessor company of Ohio Fuel in 1912. He was named Ohio Fuel's general superintendent of production in 1928, elected vice-president in 1947 and advanced to president in February, 1950. He is a member of the A. G. A. General Nominating Committee.

Mr. Grinstead joined The Columbia Engineering Corporation in Pittsburgh, in 1929,

E. C. Overbeck

C. I. Weaver

W. N. Grinstead

A. W. Lundstrum

after spending eight years with the Appalachian Electric Power Company and the Mountain Service Corporation. The following year he was transferred to Binghamton, N. Y. as treasurer of the Columbia System companies with headquarters there. He joined Ohio Fuel Gas Company in 1939 as treasurer and a director, was elected a vice-president in 1947 and named general manager in February, 1950.

Immediately prior to his connection with Stewart Warner, Mr. Lundstrum was president of Heating Research Corporation. Earlier he was director of research for the United Gas Pipe Line Company.

Each of these men is a member of American Gas Association.

Brooklyn Union promotes four officials

THE PROMOTION of four A. G. A. members has been announced by The Brooklyn Union Gas Company. A. Dudley Harrison, formerly assistant to the chief engineer, was named assistant chief engineer. He has been with Brooklyn Union Gas Company since 1928. During the period he has held the positions of superintendent's assistant under the engineer of distribution design, engineering assistant in the holder distribution division and superintendent of holder distribution. In 1945 he became assistant superintendent of the company's Greenpoint works. Subsequently he rose through the positions of assistant engineer of manufacture, engineer of development and planning, engineer of manufacture and assistant to chief engineer. Mr. Harrison is active in the Operating Section of A. G. A.

Fred M. Roesch, formerly superintendent of the Brooklyn street section, was named general superintendent of the distribution department. He joined the company in 1916, left it for service in World War I and returned to spend his entire time since then in distribution work.

Henry C. Stebbins, who has been assistant superintendent of the Queens street section, has been made superintendent of the Brooklyn street section. He has been associated with distribution work since joining the company in 1931.

Edwin W. Schaefer, employed by the manufacturing department in 1928 as a chief electrician and master mechanic, held various posts at Greenpoint Works until his transfer to the distribution department in May, 1951, when he took charge of the transportation section. He has now been appointed superintendent of that section.

A.G.A. makes staff changes in three fields

AMERICAN GAS ASSOCIATION has announced a series of staff changes designed to streamline supervisory positions in natural gas, research and publicity.

Eugene D. Milener has been made secretary to both the Natural Gas Department and the Manufactured Gas Department. In addition, he has assumed administrative duties formerly performed by George H. Smith.

Mr. Smith continues as director of the Natural Gas Department and will maintain contact with its policies. Eventually, he will move to Washington, D. C., to manage the Association's new Washington office.

Thomas Lee Robey, secretary of the Association's General Research Planning Committee, has received the additional duties of coordinator of research. Assisting as research engineer will be Roy A. Siskin, formerly with the A. G. A. Laboratories in Cleveland, Ohio.

In preparation for expansion of the Association's publicity program, James M. Beall has been appointed director of a new Public Information Bureau replacing the Publicity Bureau and the Bureau of Publications. He has also been made secretary of the Association's Publicity and Advertising Committee. George A. McDonald has been appointed manager of press relations in the Public Information Bureau with particular emphasis on financial news. Jean Clarke Thompson, who

E. D. Milener

T. L. Robey

R. A. Siskin

J. M. Beall

has handled domestic publicity for A. G. A. since 1949, resigned May 15, 1951 to marry Lowell H. Pearson, independent oil operator of Casper, Wyoming.

Mr. Milener joined A. G. A. in 1928 as industrial gas research engineer. From 1935 to 1946 he was secretary of the Industrial and Commercial Gas Section. In 1946 he was made coordinator of general research and from 1948 until the present time has served as coordinator of utilization research.

Mr. Robey has been coordinator of gas production research since he joined A. G. A. in 1948. Before that he was active in the A. G. A. Technical Section and at one time was chairman of the Chemical Committee. Mr. Siskin graduated from Case Institute of Technology in 1940. He joined A. G. A. Laboratories in 1946 and was serving as junior research engineer at the time of his latest appointment.

Mr. Beall started his business career with A. G. A. in 1929 as editor of the PROCEEDINGS. He served as editor of the A. G. A. MONTHLY from 1934 to 1949, assistant publicity director from 1947 to 1949, and as manager of publications from 1949 until his latest appointment. Mr. McDonald has served as publicity director from the time he joined A. G. A. in 1945. He was formerly public utility and railroad editor for *The New York Sun* and an officer and director of the New York Financial Writers' Association.

New Orleans Public Service names Dinwiddie president

GEORGE S. DINWIDDIE was elected president of the New Orleans Public Service, Inc., at the board meeting, May 16. At the same time, A. B. Paterson, formerly president and chairman of the board, was re-elected to the latter position.

Mr. Dinwiddie joined Public Service in 1936 as tax and research clerk. Subsequently he served the company as executive office assistant, budget director, head of the budget and statistical department, and economist and was elected vice-president in 1949. He is a past president of the Tulane Commerce Alumni Club, and was chairman of the research division of the New Orleans Committee for Economic Development. He was elected a member of Beta Gamma Sigma, honorary society for outstanding achievement in business administration.

Mr. Paterson came to New Orleans in 1917 and entered that city's utilities company in 1920 while it was in receivership, as advisory engineer. When the business was reorganized as New Orleans Public Service, Inc., in 1922, he became its vice-president and general manager. In 1930 he was made president.

Mr. Paterson is a member of A. G. A. His community service during the 30-odd years he has been connected with New Orleans Public Service, Inc., and its predecessor, have been extensive. He has been president of the Boy Scouts of America, New Orleans area; president of the Association of Commerce; president of the United Community War Chest; president of the New Orleans Aviation Board; recipient of the Times-Picayune Loving Cup for outstanding community service in 1944; chairman of Louisiana's Department of Commerce and Industry as well as holding other posts of civic honor and responsibility. He is a former King of Carnival and is a leader in charitable, cultural and patriotic activities.

A. B. Paterson

G. S. Dinwiddie

Promotions announced at East Ohio Gas Company

DANIEL E. MALONEY has been named personnel director of The East Ohio Gas Company, Cleveland. He is succeeded by R. F. McGlone as Cleveland commercial manager.

The company has also announced that C. W. Tobey has been appointed assistant commercial manager, succeeding Walter Frick, who has retired. J. E. Malone replaces Mr. Tobey as head of the credit department.

Mr. Maloney is a member of the A. G. A. Accounting Section Management Committee and of the Accounting Employee Relations Committee. Mr. McGlone is vice-chairman of the A. G. A. Accounting Section, while Mr. Tobey is a past chairman of the Customers Collection Committee.

D. E. Maloney

R. F. McGlone

Piedmont names Sheehan

EFFECTIVE July 1, 1951, J. J. Sheehan has been appointed general sales manager of Piedmont Natural Gas Company with headquarters in Charlotte, North Carolina.

Mr. Sheehan has been serving as sales manager with Southern Union Gas Company in Galveston, Texas for the past six years. He is also a member of A. G. A.

J. J. Sheehan

Texas Eastern promotes executives for new division

EDWARD J. KENNELLY, division manager at Downingtown, Pa., will become manager of the newly formed Division 5 of Texas Eastern Transmission Corporation. This division will embrace the area from Kosciusko, Miss., to the northern boundary of Kentucky, with offices to be located at Lebanon, Tennessee.

William Falleaf, assistant manager of Division 4 at Baytown, Texas, will become assistant division manager at Lebanon. Paul L. Hughes, division manager at Baytown, will replace Mr. Kennelly as manager of Division 3 at Downingtown.

William C. Britt, assistant division manager at North Little Rock, Ark., will transfer to Baytown as division manager. Earl Humble will move up from division engineer to assistant division manager at Baytown. At North Little Rock, Robert S. Cooper, division engineer, will assume the duties of assistant division manager.

Mr. Kennelly is a member of the A. G. A. Accident Prevention Committee and of Educational Subcommittee and the Subcommittee on Safety in Gas Transmission.

Universities honor gas men

S. B. IRELAN, president of Cities Service Gas Co., Oklahoma City, Okla., was honored at Purdue University's commencement exercises by presentation of an honorary degree of Doctor of Engineering. A 1909 graduate of Purdue, Mr. Irelan has been president of the Cities Service Gas Company since 1944, and has been connected with the management of various company subsidiaries during the past 42 years. He is a member of the A. G. A. Distinguished Service Award Committee and of the new Gas Industry Advisory Council.

James F. Oates, Jr., chairman, The Peoples Gas Light & Coke Co., Chicago, was awarded one of three distinguished certificates given by Princeton University to members of the class of 1921. Mr. Oates is vice-chairman of the A. G. A. PAR Committee and a member of the A. G. A. Finance Committee.

Praeger of Brooklyn Union called to army duty

HOWARD A. PRAEGER, manager of the publicity and advertising department of The Brooklyn Union Gas Company, Brooklyn, N. Y., has been called to duty with the 301st Mobile Radio Broadcasting and Leaflet Group, at Fort Riley, Kansas. Recalled in the rank of major, Mr. Praeger will be operations officer of the group. His outfit is currently undergoing intensive training in psychological warfare.

During his four years of active duty in World War II he served primarily in counter intelligence and in public relations.

Mr. Praeger has been a member of the Publicity and Advertising Committee of American Gas Association for several years, and was vice-chairman of that committee for 1950-51. He has been active in the work of the Public Utilities Advertising Association.

Mr. Praeger has been active in the communications field. He is author of a number of public relations articles and a contributor to educational textbooks.

H. A. Praeger

Douglas joins Union Gas

GEORGE M. DOUGLAS has been appointed sales manager of Union Gas Company of Canada, Limited, and will be located at the company's head office in Chatham, Ontario. Since 1949 he has been with The Consumers' Gas Company of Toronto as superintendent of sales promotion and advertising. He is a member of American Gas Association.

Waring honored for standards work

CLARENCE H. WARING, vice-president, The Gas Service Co., Kansas City, Kan., has been awarded a certificate of service by American Standards Association, Inc., for his work in the development of American Standards. Presentation of the certificate was made by Vice-Admiral G. F. Hussey, Jr., managing director of ASA, during ceremonies at ASA headquarters on May 29.

Mr. Waring represents American Gas Association on the ASA Standards Council. He is currently chairman of American Gas Association's Approval Requirements Committee which is also a Sectional Committee of ASA. Its membership includes representatives of utilities, manufacturers, public bodies, leading trade associations and consumer groups. The committee supervises the preparation and revision of approval, listing and installation standards for gas-burning appliances and accessories, directing the activities of 23 requirements subcommittees. Once approved by Mr. Waring's group, new standards are passed on to ASA for final adoption as American Standards. To date, 37 gas industry standards have received ASA approval. Thirty-two of these standards are in current use. They cover items ranging from house heating gas boilers and furnaces to gas valves.

Equipment certified under appropriate American Standard approval and listing requirements is listed in the "Directory of Approved Gas Appliances and Listed Accessories*" published periodically by the American Gas Association. This is widely distributed to those interested in the purchase, sale and utilization of gas appliances. The Directory is published in complete form semi-annually in January and July and kept up to date through supplements for the intervening months. It is available on a subscription basis at two dollars per year. Semi-annual issues are seventy-five cents each and the supplements ten cents.

C. H. Waring

* Order direct from American Gas Association Laboratories, 1032 East 62 St., Cleveland 3, Ohio. Make checks payable to American Gas Association.

Lindeman joins Bridgeport

HENRY V. LINDEMAN has been appointed engineer of The Bridgeport Gas Light Company, Bridgeport, Conn., to direct the production, distribution and customer service activities. He was formerly consulting gas engineer of Ebasco Services, Inc., New York.

Henry V. Lindeman

Mr. Lindeman has been connected with the gas industry for 25 years, the past six of which were with the Ebasco firm. During World War II he was with the War Production Board in Washington.

He is a graduate of Pennsylvania State College, a licensed professional engineer in the state of New York and a member of Sigma Tau honorary engineering fraternity and American Gas Association.

Horne to head marketing of Rheem gas refrigerator

CARL H. HORNE has been named sales manager of the newly formed Rheem Manufacturing Company. He was formerly vice-president of the Alabama Gas Corporation, Birmingham. The appointment of Mr. Horne is in line with the Rheem Company's announcement, last November, of plans to develop and market a gas-operated refrigerator. A sales division is being established to plan distribution of the refrigerators. Mr. Horne will head this division and develop a sales organization.

C. T. Miller, sales manager of the appliance division, has been made assistant general sales manager.

Ralph W. Cooke, central regional sales manager in Chicago, will be transferred to New York, succeeding Mr. Miller as appliance division sales manager. William S. Goodfellow, assistant western regional sales manager, will move from California to Chicago to become central regional sales manager.

Richard O. Pallin has been appointed advertising and sales promotion manager. He will be in charge of all advertising, promotion and public relations activities, and will have his headquarters in New York. Albert Welge, who has been acting advertising manager, continues as a member of the advertising and sales promotion staff.

C. H. Horne

Well known in the gas industry, Mr. Horne has been active in the American Gas Association and the Southern Gas Association for a number of years. Currently he is chairman of the A. G. A. Residential Gas Section, a member of the A. G. A. Managing Committee, New Freedom Gas Kitchen Committee and National Advertising Committee.

New engineering department at Connecticut L & P

CALVIN T. HUGHES, formerly vice-president in charge of operations of The Connecticut Light & Power Company, has been assigned as the vice-president in charge of the firm's newly created engineering department. Walter W. Forman, formerly general superintendent of operations, has been elected vice-president in charge of operations.

Mr. Hughes has been with the company since World War I, and has been intimately associated with its engineering development during the entire period. He was elected vice-president in 1949.

Mr. Forman entered the public utility field in 1923 with the Adirondack Power & Light Company and was later associated with W. A. Shoudy, New York utility construction engineers. He joined Connecticut Light & Power Company in 1929 as general engineer, was appointed assistant general superintendent in 1943 and general superintendent in 1949.

Home economics association elects Mrs. Herbert

ELIZABETH SWEENEY HERBERT, household equipment editor of *McCall's* magazine, was chosen president-elect of American Home Economics Association at that group's convention in Cleveland on June 28. Mrs. Herbert will serve one year as president-elect and next June, becomes president succeeding Florence Fallgatter of Iowa State University.

Mrs. Herbert, formerly an assistant professor of both household technology and foods and nutrition at Syracuse University, received her BS and Masters Degree in Science at that Institution. She is a past-president of New York State Home Economics Association; former national chairman of the Home Economics in Business group; and served as director of home service for the Central New York Properties of Associated Gas and Electric System. At present, Mrs. Herbert is vice-chairman of the Consumer Goods Committee, American Standards Association.

American Home Economics Association, which has just chosen Mrs. Herbert as its president-elect, is one of the largest professional women's groups in the country with a membership of more than 25,000. Its members include home economists in education—colleges, universities, public schools, adult education, extension services; home economists in business—nutritionists and dietitians. The organization was founded in 1909 in New York and incorporated in May of this year.

Mrs. E. S. Herbert

NEGA studies conversion

(Continued from page 30)

burner changes were made. He stressed these points so that new materials could be ordered and delivered to the job in advance of the change-over, to minimize shut-down time while physical changes were being made. This in turn requires a selling job to industrial customers on the conversion problems so that they can arrange their plant schedules to meet this work.

In line with this thought, Mr. Foote made an inspiring talk at the luncheon, in which he stated: "Good public relations are the backbone and foundation stone of the success of your efforts in the past, and most of you have done a good job in building good public relations with your industrial customers. However, public relations is a fragile commodity and easily fractured. You may have to sell the advantages of uniform therm basis for billing even though that is an executive function. But one thing you can sell and sell well and contribute to a maintenance of good public relations is this business of uniform characteristic of natural gas burning and uniform chemical structure. Examples of this are the special flames for glass work and the use of prepared atmospheres in heat treating."

In the round-table discussions Mr. Foote observed that on high pressure manufactured gas installations using 15# gas, the gas pressure would probably have to be raised to 25# in order to get the velocity to entrain enough air for a proper burning mixture. Due to the weight of the inspirating medium it is necessary to attain this higher velocity. It also will be necessary in these installations to reduce the size of the orifice and have a larger port to maintain relatively the same Btu input.

In a subsequent question and answer period Mr. Koch reiterated a previous statement that the constant chemical components of natural gas were of material advantage to the heat treater who depended on prepared atmospheres in either batch type or continuous furnaces.

The Commercial Group of the New England Gas Association heard a talk on the conversion problems of heavy duty cooking equipment in hotels, restaurants and institutions by Myron W. Ryder, utilization engineer and service supervisor of the Cambridge (Mass.) Gas Light Company. It was particularly fitting that this company should send their representative as they had already gone through conversion some time ago, when the company changed over from a low to a high Btu oil gas. This company's experience was desired as the characteristics of high Btu oil gas are so similar to natural gas that the problems involving conversion could be met in the same manner.

It was first established that it was absolutely necessary to have a complete survey of all commercial equipment either by local company personnel or preferably by the organization engaged to do the conversion job. This survey must be complete and accurate so as to eliminate any delays when conversion actually takes place.

The problems involved in commercial changeovers are entirely different from those in a residence. A home owner can be inconvenienced for a few hours or even a day. However, the commercial establishment with its narrow margin of dollars and cents profit, and the institution whose inmates are entirely dependent on others for their welfare, both of which must provide cooked food on schedule, cannot afford to be shut down.

Keep on schedule

This brings up the question of cooperation with the conversion group to set up a schedule of changeover and keep to that schedule. A hotel, restaurant or hospital will have some period during the 24 hours that can be set aside for conversion work which will be of mutual convenience. The survey card of a particular establishment will show what has to be done, what new parts have to be purchased, and an accurate estimate of the time required to do the job can be calculated. With this information at hand, a schedule can be worked out for each district.

There is a customer public relations job to be done with commercial accounts. They first must be told about the particular characteristics of natural gas, particularly as it may affect the individual installation. It is quite often that commercial equipment is over-gassed and works satisfactorily on manufactured gas. This cannot be done on either high Btu oil gas or natural gas. The customer must be convinced and made to understand that some of his cooking operations will be somewhat slower. For instance, a heavy duty range rated at 50,000 Btu worked very well when adjusted for an input of 54,000 Btu on manufactured gas. On conversion to natural gas the 50,000 Btu rating of the range will be maintained and the customer will receive 50,000 Btu and no more. He will get exactly what he paid for when the equipment was purchased and it will be serviced at exactly the manufacturer's rating; he will not be able to push the range beyond its prescribed rating. Therefore if any equipment has been over-gassed before conversion, it will of necessity be lowered to the established rating for the new gas, thus slowing cooking slightly.

Three large educational institutions in Cambridge were fully cooperative on this score when it was explained how the characteristics of the new gas permitted only the delivery of that quantity of gas for which the equipment was designed. Those cooking operations which were slowed down because of the new gas had their schedules readjusted to meet the situation and there have been no complaints on operation of the equipment.

Mr. Ryder explained that certain types of burners cannot be drilled to larger port sizes because the increase in size would place the ports too close together. When this condition occurs with natural gas, the individual port flames blend together with each other and produce a large gob of flame instead of the desired individual flames with clear blue cones. In those instances the burners will have to be replaced. On some types of old water heating equipment it is almost a certainty that the burners will have to be replaced.

In practically all instances when the Cambridge company converted commercial equipment, pressure regulators were installed to insure satisfactory and uniform performance. Only in isolated cases was it necessary to answer emergency calls; usually routine check by company service men as soon as possible after conversion was all that was needed.

Smooth running of the entire conversion job on both industrial and commercial equipment was due to the painstaking and thorough survey and planning beforehand.

Tale of a talent

● If a man has a talent and cannot use it, he has failed. If he has a talent and uses only half of it, he has partly failed. If he has a talent and learns somehow to use the whole of it, he has gloriously succeeded, and won a satisfaction and a triumph few men ever know—*Thomas Wolfe.*

Research & utilization

(Continued from page 12)

Servel Inc., New York. Dr. Hainsworth is currently chairman, A.G.A. Technical Advisory Group for General Utilization Research.

William D. Egan, The Peoples Gas Light & Coke Co., Chicago, gave the delegates a summary of his company's experiences with the domestic gas clothes dryer. Mr. Egan's paper is reprinted in this issue of the MONTHLY starting on page 15.

Technical problems of waste disposal by gas-fired incinerators were outlined by the next speaker, W. M. Milbourne, Calcinator Division, Valley Welding & Boiler Co., Bay City, Michigan. He called particular attention to the need for keeping the public and the utility industry better informed on this comparatively young gas appliance.

"What can one man do?" asked Ralph M. Besse, vice-president and general counsel, The Cleveland Electric Illuminating Company. During an inspirational address at the Friday luncheon, Mr. Besse named these pointers for the average business man to follow: (1) Treat your employees right; (2) educate your employees; (3) become familiar with the story of what your company has done for its employees and for society; (4) analyze your own company's practices in the light of the social needs of the community you serve.

Final session of the conference on Friday afternoon was highlighted by two panel discussions. Eli Shapiro, Dearborn Stove Co., Dallas, a member of A.G.A. Technical Advisory Group for Heating and Air Conditioning Research, presided at the meeting.

Dr. Sam C. Hite, research professor at Purdue University, acted as moderator of a clinic on venting gas appliance under modern conditions. He aptly described venting, ignition and combustion (VIC) as "the three-headed stepchild of the gas industry," and venting as "the head that the gas industry knows least about."

Venting is a particularly difficult subject, Mr. Hite added, because it is necessary to work with pressures of the order of only one hundredth of a pound per square inch. Nevertheless, two A.G.A. PAR research projects are currently attacking problems in the venting field. One project at the A.G.A. Laboratories involves a study of the draft hood and other draft control methods. A second project at Purdue University is designed to obtain basic knowledge on vent capacity and vent operation. The research also includes a study of the effect of low ambient air temperatures, condensation, and the effect of pressure packs.

This work was described in more detail by William D. Egan, The Peoples Gas Light & Coke Co., Chicago, and Walter B. Kirk, A.G.A. Laboratories.

Chester E. Blome, William-Wallace Co., Dallas, emphasized the need for better training programs and use of visual aids to teach correct venting procedures. He noted that considerable progress towards better venting is being made through research, improved installation instructions, increased publicity and more modern codes. Mr. Blome is a member of the A.G.A. Technical Advisory Group for Heating and Air Conditioning Research.

Current studies of corrosion from products of combustion were described in a separate paper by Robert S. Peoples, Battelle Memorial Institute, Columbus, Ohio. He forecast that results of this work and studies already completed will open the way to improved appliance design, construction, and installation for maximum performance.

Final event on the program was a special clinic on changeover problems as related to utilization. Joseph V. Turpish, New York and Richmond Gas Co., Stapleton, Staten Island, N. Y., was moderator. Individual papers were presented by Edwin L. Hall, director, A.G.A. Laboratories, George B. Johnson, Minneapolis Gas Co., and A. E. Stack, Washington Gas Light Company.

Mr. Johnson listed some suggested objectives for manufacturers to keep in mind when designing modern gas appliances. He noted that full adoption of all these objectives may not be practical, but even partial accomplishment of these aims would some day result in reduced costs for conversion and service. The following items incorporated in appliance designs, he said, would be beneficial to utilities:

(1) Burners should be designed to obtain port loadings of around 20,000 Btu per square inch, with ports not so large as to encounter trouble with flashback on faster burning gases. This would eliminate the problem of drilling ports for a conversion.

(2) Flash tubes should be of rigid design so that they are not easily moved by jarring of the appliance. Flash tubes should also be of sufficient diameter so as to be able to handle the proper mixture of all types of gases. Greater care should be exercised in the accurate drilling of charging ports, both in direction and size, to insure an explosive mixture close to the center of the explosion limit.

(3) Cap and plug threads should be of standard size so as to eliminate the necessity of carrying so many sizes of orifice caps and plugs.

(4) Burner orifices, pilot orifices and burner controls should be located so that they can be easily seen and removed.

(5) A diagram of all electrical circuits should be posted on the appliance for ready use by the serviceman.

(6) Primary air adjustments should be so located that the conversion man can make primary air adjustments while the gas is burning.

Final speaker on the panel, A. E. Stack, Washington Gas Light Co., presented thoughts on improvement of appliance design to reduce post-conversion troubles. His remarks were based on information obtained when the company changed from mixed gas to natural gas of 1,100 Btu and 0.64 sp g during 1946 and 1947.

Mr. Stack headed his talk with several generalizations. He noted that venturi sizes for manufactured gas are inadequate for natural gas. Another possible generalization, he added, is that pilot tips of both standing and automatic pilots in a great many cases are physically difficult to convert.

Chairman R. J. Rutherford of the Domestic Gas Research Committee closed the conference with a stimulating summary of ideas and thoughts to take home. He reminded the delegates that research cannot be fully effective unless its findings are put into actual practice.

Pacific Coast Research and Utilization Conference

THE Pacific Coast Conference was held at Berkeley, California on April 26 and 27 under the joint auspices of American Gas Association Committee on Domestic Gas Research and the Pacific Coast Gas Association. Preceding this meeting, the PCGA Customer Service Group met for two days at the same location. A special luncheon meeting for both groups was held between the two conferences.

O. R. Doerr, vice-president, Pacific Gas & Electric Co., San Francisco, presided at the luncheon meeting and commented on the practical value of the industry's research program.

T. T. Arden, executive vice-president, Grayson Controls Division, Robertshaw-Fulton Controls Co., Lynwood, Calif., was featured speaker at the luncheon meeting. In his talk "Research: The Life Blood of Our Future," he outlined a practical plan to enable individual manufacturing companies to finance product research during a period of mobilization and high taxes. He urged all gas appliance manufacturing companies to reappraise their research budgets in the light of present and future conditions. Mr. Arden predicted they would find in many instances that such budgets could be profitably increased.

The opening session, presided over by Guy Corfield, research engineer, Southern California Gas Co., conference chairman, was devoted to an explanatory review of different phases of the A.G.A. Domestic Research Program under the PAR Plan. These analyses and explanations were given by men who are actively engaged in the research or are members of technical advisory groups. A. J. Lampert, Rheem Manufacturing Co., Walter B. Kirk and R. L. Stone of A.G.A. Laboratories, interpreted and projected the research work in water heating. Mr. Kirk, Mr. Stone and Mr. Milener discussed gas cooking research projects that are under way or planned. F. O. Suffron, Hammel Radiator Engineering Co., Professor Stanley F. Gilman, University of Illinois, and Mr. Kirk presented material on A.G.A. progress in gas heating and all-year air conditioning research. Chief emphasis was placed on venting and air distribution.

Mr. Stone, in his paper "Heat Transfer in Gas Furnaces," gave an unusually clear interpretation of one of the most highly technical utilization research projects ever undertaken by A.G.A. During the discussion and question period which followed the presentation, the prediction was made that this work will provide for the first time a foundation for designing heat transfer elements of gas furnaces on a truly scientific basis. The audience complimented Mr. Stone on his research work and on the printed bulletin which was distributed for the first time at this conference.

Research work in the general utilization field was described by the chairman of the General Utilization Technical Advisory Group, Dr. William R. Hainsworth, vice-president in charge of engineering, Servel, Inc. This research is concerned largely with combustion and burner design problems, particularly burner flexibility and adaptability to wide ranges of gases. Mr. Kirk, Mr. Stone and Mr. Milener also took part in this presentation.

(Continued on next page)

Nathan H. Gellert, Jr., vice-president, Seattle Gas Co., a member of the Committee on Domestic Gas Research, presided at the second session. Mr. Gellert gave an interesting overall outline of domestic utilization problems and steps that are being taken to meet them. William T. Shatzer, Southern California Gas Co., presented a well documented paper on Corrosion in Galvanized Automatic Storage Water Heater Tanks which was written by R. J. Phillips, San Diego Gas and Electric Co., and R. E. Dodson, City of San Diego Water Department. The authors emphasized the severity of this problem by pointing out the large percentage of tanks that fail prematurely. They noted that the problem is getting worse with the general trend toward higher hot water temperatures and overworking of water heaters.

Using slides, Dr. Hainsworth showed the technical and operating characteristics of the new gas refrigerators. He pointed out among other features the design and construction changes that have been made to meet current popular demand for more storage space with smaller over-all refrigerator dimensions. Mr. Milener described "Detonation Combustion: Its Implications and Possibilities." He discussed at length the attacks that are being made on ignition and temperature control problems of commercial cooking, baking appliances and equipment.

In his paper, "Progress in Air Distribution for All-Year Gas Air Conditioning," Professor Gilman supplemented his technical material with an analysis of the high percentage of the total cost of an air conditioning system represented by the air distribution duct work. Simplification and cost reduction in this bracket are important objectives of the present research work in air conditioning.

Final session of the Pacific Coast Conference was devoted to cooking problems and steps being taken to meet the challenge of small spaces that architects now allow for installing automatic appliances vital to household operations. R. R. Taylor, Fraser and Johnson Co., vice-chairman, Heating Division, Manufacturers Section, PCGA, was chairman of this session.

Harry L. Warren, Southern California Gas Co., regarded as an expert on kitchen ventilation, used dramatic slides of "smoke tests" to show the several courses that grease laden air takes with different types of ventilating systems and different locations of fans and outlet grills. Mr. Warren also made several interesting suggestions for installing ranges to minimize grease discoloration on kitchen walls.

The American Gas Association's field test program on automatic range ignition (a PAR Plan project) was outlined by Mr. Milener. Progress of the tests on the Pacific Coast was discussed by W. M. Couzens, Harper Wyman Co., Glendale, Calif., who represents a number of gas range manufacturers on the Coast with respect to this program.

Approval tests for new requirements on central heating appliances for closet or alcove installation, and for performance of electrical assemblies of appliances, were described by Frank Fiedler, Jr., Los Angeles Branch, A.G.A. Laboratories. Mr. Fiedler supplemented his paper with slides showing the great care with which the tests are conducted.

As the final event on the two-day program, Mr. Milener summarized highlights of the papers and the extensive discussion periods.

Servicing

(Continued from page 20)

but by keeping a record of call backs and total complaints you have an indication of how things are going. At the present time our over-all call backs are about two percent. A record of damaging house heat pops is a good indication of house heat service. For example, in 1946 with 40,000 heating customers we had 104 pops. In 1950 with 80,000 heating customers, we had 83 pops. Improvement records of this kind are good records to have in damage suits as it shows that the utility is not negligent in improving its service.

Another good record to keep is the total complaints versus new appliances sold. In our case we have had a tremendous increase in appliances and customers without a drastic increase in complaints. Since 1946 there have been about 45,000 new ranges installed, 40,000 storage water heaters put in, 7,000 Servels and several thousand miscellaneous appliances such as clothes dryers, incinerators, etc., installed. About 15,000 new domestic customers have been added. Following are the total domestic complaints for the same years:

1947 — 141,600 (Conversion Year)
1948 — 130,800
1949 — 131,200
1950 — 129,600

Since 1947 we have added 40,000 house heat customers. Our total complaint record for house heat is as follows:

1947 — 56,400
1948 — 60,000
1949 — 61,200
1950 — 86,400

The last year we had our greatest increase of house heat installations of any year. They went in much faster than we could keep up with them on initial inspections. This accounts for the large jump in 1950 complaints.

I have tried to show by actual statistics that a permanent school (not a school that just operates when you are not busy), and adequate supervision is essential to reducing operating costs.

I don't want to leave the impression that cost reduction is entirely due to utility operation, because the appliance manufacturers have done a remarkable job through their own research and through various PAR committees in producing automatic appliances that are a credit to the industry. We feel that their efforts of cooperation have helped tremendously in reducing service costs. We would like to see more utilities take advantage of the research work that has been completed by A. G. A. Laboratories and apply this research work to their service problems the same way that manufacturers have applied them to their products.

Clothes dryers

(Continued from page 17)

dryer showed that the maximum pressure developed by the venting system (3 inch diam.) was 0.41 inch equivalent water column. This pressure is equivalent to a wind velocity of 28 miles per hour. Therefore during periods when winds of 28 miles per hour or greater were blowing against the vent outlet of the dryer, no venting would take place.

Further tests on this dryer showed that it will perform satisfactorily as a vented dryer when subjected to wind velocities up to about 25 miles per hour without any detectable change in drying time.

Dryer No. 3—This dryer is also equipped with a fan to draw the heated air, flue products, and moisture from the drying drum and to expel these products from the dryer through a lint catching mesh screen, and then into the venting pipe.

The test of this dryer showed that the maximum pressure developed by the venting system (three inch diam.) was 1.60 inches equivalent water column. This pressure is equivalent to a wind velocity of 56 miles per hour.

Dryer No. 3 was found to perform entirely satisfactorily when required to vent against wind velocities up to 42 miles per hour. When required to vent against wind velocities higher than 42 and up to 48 miles per hour, the dryer continued to perform continuously, but required a longer time to dry a load of wet clothes.

Tests of the dryers just outlined are based entirely on extending solid flue pipe with the necessary elbows from the outlet of the dryer out through the closest available basement window. A 90° el-

bow was fastened on the end of the last length of horizontal pipe and faced downward.

A study is being made to determine if some suitable means cannot be incorporated in the venting system to allow the dryer to vent into the space in which the dryer is located, for the period of time that the dryer venting system is incapable of overcoming outside atmospheric conditions. These studies are now in progress. Indications are that a single-action draft control similar to the Simplex or the Field Barometric Control can be connected into the vertical run of flue pipe and will if weighted properly, allow the waste products from the clothes dryer to vent into the space around the dryer during the period the venting system cannot overcome outside pressure conditions. The drawback to this plan so far is that neither Simplex nor Field draft controls are made in suitable sizes for such use. The smallest Simplex control available at present at least in Chicago, is six inches in diameter, and the Field, 12 inches in diameter. However, these two concerns could probably be persuaded to manufacture small controls for such use if there was sufficient demand.

The use of such a control would permit the installation of all three dryers studied as vented dryers, Dryers 1 and 2 requiring the use of a pressure relief control. Admittedly, Dryer 1 would operate unvented a far greater percentage of the time than would Dryer 2. Dryer 2 would also operate unvented for certain periods.

Where large numbers of clothes dryers are already installed and in use as unvented dryers, and are not giving satisfaction to the customer because of excessive lint and moisture conditions, a venting system incorporating a pressure relief control could be installed. It probably would eliminate customer dissatisfaction in most cases.

Some thought has been given to cold air entering the home through the clothes dryer vent. Because of the few hours of use of a clothes dryer, in some cases it may be necessary to install a device to prevent the flow of cold air through the vent.

We have not as yet arrived at the consideration of such a device, but where a pressure relief device is being used in the venting system, a butterfly backchecking device or even a hand-operated damper could be installed between the pressure relief control and the vent outlet.

I hope that this article has given some idea of the problems that can be expected from the operation of unvented clothes dryers and how many of the problems probably can be solved by venting the dryers. It is not just a matter of running flue pipe from the dryer out the closest window.

Montana Power seeking gas from Canada

THE MONTANA POWER CO., Butte, Mont., has filed an application with the Federal Power Commission, proposing the construction of pipeline facilities to import natural gas from fields in Alberta, Canada, into Montana.

The company plans to import the gas from fields in the Pakowki Lake area in southeastern Alberta. The gas is to be produced and transmitted in Canada by two newly formed subsidiaries of Montana Power. It is proposed to construct 18 miles of 16 inch pipe from the Pakowki Lake area to the Canada-Montana border, and approximately 52 miles of the same diameter line from there to a connection with Montana Power's existing system near Cut Bank, Mont.

Jobs for advertising when product is oversold

● A check list based on successful past practice and some new functions suggested by members of the Printers' Ink Jury of Marketing Opinion and other advertising executives.

(1) Insure consumer good-will and acceptance of brand name and products when a buyers' market returns.

(2) Keep geared up so as to be ready for a sudden buyers' market.

(3) Build up quality values of a product as a hedge against future price competition.

(4) Protect financial value of good-will purchased by large investments in advertising in the past.

(5) Speed up a trend that can be taken advantage of in normal times.

(6) Create acceptance of company as public-spirited, friendly, sound, etc., through institutional advertising.

(7) Maintain dealer relations when product flow becomes a trickle and salesman contacts are reduced.

(8) Maintain good relations with a large number of small customers when forced to cater to fewer larger customers.

(9) Keep a promise of advertising support made to dealers before the product became oversold.

(10) Create consumer desire for a product purchased by wholesalers and retailers in larger than normal quantities.

(11) Locate and sign up new and better dealers.

(12) Take on assignments that are usually lost in the rush for immediate sales—such as illustrating the completeness of the line.

(13) Experiment with a new item and test its future possibilities.

(14) Establish a brand economically when competitors and other advertisers are off the market.

(15) Explain shortages to dealers and consumers.

(16) Tell how substitute materials are proving out, paving the way for their acceptance on a permanent basis.

(17) Spread the news of new industry inventions.

(18) Ward off competition from new sources, including other industries, at a time when consumers have money to spend but can't spend it on your product.

(19) Show customers how to get longer life out of your products.

(20) Take advantage of the close reading advertising gets at a time when people have more money and less to spend it on.

(21) Hold, and if possible better, space and time advantages.

(22) Locate customers and markets with high priority ratings.

(23) Show manufacturers how to make more efficient use of present plant, equipment, materials and labor.

(24) Show cunsumers, the trade and manufacturers how to cut waste.

(25) Maintain contacts with executives in plants that are in restricted areas where salesmen can't call.

(26) Contact replacement personnel during a time of crisis when buyer turnover is stepped up.

(27) Spread information about all types of products in as wide a sphere as possible in the hope that someone will get an idea of some way to adapt the product to the furtherance of the defense effort.

(28) Establish craftsmanship of American products at a time when well-established foreign products are cut out of the market or when foreign products have entered the market as substitutes.

(29) Gain reasonable acceptance of one style for another where normally a choice of several colors and styles might be available.

(30) Work in the national interest to sell bonds, conserve strategic materials, enlist support for worthy charities, and such public service causes as those sponsored by The Advertising Council.

—Printers' Ink

A.G.A. nominates for 1950-1951

(Continued from page 4)

LABORATORIES MANAGING COMMITTEE

For chairman

ARTHUR F. BRIDGE,* president and general manager, Southern Counties Gas Co., Los Angeles, California

For vice-chairman

CHARLES E. BENNETT, president, The Manufacturers Light & Heat Co., Pittsburgh, Pennsylvania

MANUFACTURERS' SECTION

For chairman

GORDON LEFEBVRE, president, The Cooper-Bessemer Corp., Mount Vernon, Ohio

OPERATING SECTION

For chairman

H. BRUCE ANDERSEN, vice-president i/c distribution, The Philadelphia Gas Works Co., Philadelphia, Pennsylvania

* Renominated.

For vice-chairman

CHANNING W. WILSON, research chemist, Consolidated Gas Electric Light & Power Co. of Baltimore, Baltimore, Maryland

PUBLICITY AND ADVERTISING COMMITTEE

For chairman

C. J. ALLEN,* vice-president (retired), The Connecticut Light & Power Co., Waterbury, Connecticut

RESIDENTIAL GAS SECTION

For chairman

WILLIAM J. SCHMIDT, assistant vice-president and general sales manager, Long Island Lighting Co., Mineola, New York

For vice-chairman

RAYMOND J. VANDAGRIFF, general sales manager, Laclede Gas Co., St. Louis, Missouri.

Industrial relations

(Continued from page 24)

● **"Use a rifle rather than a shotgun"**—Companies conduct employee attitude surveys to find out what is on the employee's mind. But many companies do not stop there. They are not satisfied to know what people generally think about company matters. They break down what the employees say by departments. Some even separate the survey findings into groups according to sex, age, and length of service.

These breakdowns show where the greatest strengths and the greatest weaknesses are in the company. They give management a chance to train and retrain precisely where needed. They give a clear, sharp picture of the extent of a given problem in every group surveyed. As one president says, "Breakdowns permit us to use a rifle rather than a shotgun."

Breakdowns are only one of a host of items discussed in Studies in Personnel Policy, No. 115, "Company Experience with Employee Attitude Surveys," National Industrial Conference Board.

● **Manpower idea**—North American Aviation (Inglewood, Cal.) house organ *Skywriter* runs an "Employment" box on page one. Lead sentence reads: "The following jobs are open at North American Aviation this week"—and then follows a list of job openings.

● **Howdy**—Many companies are getting around to the idea that new employees should not be cluttered up with a lot of reading matter the first few days on the job. Continental Oil Company (Houston, Texas) has come up with a brand new approach which merits a following. New workers, in place of the elaborate handbook, get a four-page folder called "Dope Sheet For New Arrivals." This one is geared for white-collar workers but could be adapted for hourly folk as well. It's a real capsule of company policies and enlivened by cartoons.

● **Free feed**—Wives play a key role in safety vigilance at Continental Oil (Houston, Texas). Whenever a department has achieved 400,000 man-hours of safety, the wives of employees are given a free shindig. A million hours of no accidents—and workers' wives get gifts from the company.

● **Early birds**—Many companies are shifting their hours to enable workers to get home earlier during the spring and summer months. One G.E. plant, for example, put its white-collar personnel on a 7:15 a.m. to 3:45 p.m. shift—and no one grumbled. Workers like the earlier starting time so they can quit long before sundown.

Pipeline construction

(Continued from page 14)

tion of the hope of many of them to effect complete conversions to natural gas.

The continuing high level of projected expenditures throughout the five-year period for distribution facilities is evidence of the industry's prospects for additional customers and increased consumption by existing customers. Earlier years' forecasts of transmission expenditures have invariably been unduly conservative, and the present estimates, particularly for the years 1953, 1954 and 1955, may again err in this respect. It has been extremely difficult to make such projections in the past because of the uncertainty as to when and to what extent pending certificate applications will be approved by the Federal Power Commission. Inclusion of all pending applications undoubtedly would lead to inflating prospective construction expenditures; on the other hand, inclusion of approved projects only would lead to an understatement. Furthermore, some companies undoubtedly will develop plans for further construction, particularly for the later years of this five-year period, beyond those which they were able to report at this time. Uncertainties in the present world situation, material supply status and price trends add to the previous difficulties of developing precise forecasts for the more remote years. The present transmission line estimates are based on projects for which certificate approvals had been granted by the Federal Power Commission as of June 1, 1951 plus allowances for some pending pipeline projects for which the prospects for approval were bright.

As in prior years, these estimates refer to gross expenditures and include outlays for replacements and modernization, although the preponderance of the expenditures will be for additional facilities. The magnitude of this expansion program is another striking illustration of the demand for gas utility service. It also shows the industry's recognition of its responsibility to supply that demand as far as possible in the light of current difficulties in securing vital scarce materials.

Providence Gas dividend record leads

PROVIDENCE (R. I.) GAS COMPANY has a longer unbroken record of dividend payments than any other corporation with common stock listed on the New York Curb Exchange, according to a report issued by the latter body. Providence has paid dividends continuously on its common stock since 1848, while 7 other listed companies have unbroken records 75 or more years, and 24 for half a century or longer.

In response to a query, Dana M. Swan, treasurer of Providence Gas Company, told of the relatively steady maintenance of the market value of the company's common stock. "A purchaser of 20 of the $50 par stock in 1848 (equivalent to 100 shares of the present no-par stock) would have paid $1,000, approximately the same as the present market value." Through 1950 the dividend return averaged 8.278 percent. "However," he added, "the rate of return in recent years has been substantially less than this average."

Home service directors win banana contest

GAS WAS IN THE VAN AGAIN when top winners were announced for United Fruit Company's "Chiquita Banana" contest. Devoted to selection of the 15 most popular ways of using bananas, the contest was conducted among different groups, including the Home Economics in Business membership of the American Home Economics Association. Top winners included two gas company home service directors. Mrs. Dorothy Christianson, of The Gas Service Company, Kansas City, won a first prize seventeen-day trip and cruise to Havana and Guatemala on one of the United Fruit Company cruise ships. Mrs. Eugenia Krietmeyer of Laclede Gas Co., St. Louis, won a second prize of a $150 gift certificate in the department store of her choice.

McKee in new post

NORMAN R. McKEE, retired utility executive, has been elected president, James H. Knapp Co., Los Angeles industrial engineering firm. He succeeds the late James H. Knapp as head of the organization.

Prior to his retirement last year, Mr. McKee was vice-president of Southern Counties Gas Company. He has been a director of the Knapp Company for the past 15 years.

Change GIAC membership

THREE MEMBERS have been added to the Gas Industry Council of the Petroleum Administration for Defense. George A. Wilson, president, Interstate Natural Gas Company, has been added. F. T. Parks, vice-president, Public Service Company of Colorado, replaces J. E. Loiseau of the same company. M. A. Abernathy, vice-president, United Gas Corporation, replaces N. C. McGowen of that company.

PG & C names publicity director

CARL E. CLUFF has been appointed to the newly created position of publicity director of the Portland (Oregon) Gas & Coke Company. He will be responsible for all phases of public information on company matters.

C. E. Cluff

Mr. Cluff, a native Oregonian, has had wide experience with Northwest publications. He was previously managing editor of the Sandy Post. Before that he was circulation manager of the Daily Olympian at Olympia, Washington, and has been a reporter for the Gresham Outlook and The Dallas Chronicle. He is a member of Sigma Delta Chi, professional journalism fraternity.

Jones joins Peoples, Miami

ROY E. JONES has become executive vice-president of Peoples Water and Gas Company, North Miami, Florida. For the past nine years, he was vice-president of North Shore Gas Company, Waukegan, Illinois.

Prior to his connection with the North Shore Gas Company, Mr. Jones attended Harvard School of Business Administration, and worked with utility companies in Colorado and Ohio. He is a member of the A. G. A. Mid-West Regional Gas Sales Council.

New GAMA promotion chairman

M. E. MILLER, vice-president of the National Steel Constructions Company of Indiana, has been appointed sales promotion committee chairman of GAMA's water heater division. He succeeds R. A. Bissell of the Bryant Heater Division, Affiliated Gas Equipment, Inc., Cleveland.

The appointment is expected to enable the gas water heater group to enlarge its two-year-old sales promotion program among dealers and distributors of these appliances.

New chief civil engineer

ROY A. DOMAN has been appointed chief civil engineer for New York State Natural Gas Corporation, it has been announced by John J. Jacob, Jr., vice-president of the company.

Mr. Doman will have his offices in The Peoples Natural Gas Company building in Pittsburgh.

Servel safety record honored

SERVEL, Inc., has been honored by Liberty Mutual Insurance Co. for setting the highest safety records among all companies in the household and service machine industry. A safety flag awarded to Servel marks the company's new record of 4,133,186 man-hours without a lost-time accident.

During World War II the company was awarded the safety flag for a record of more than two-million man-hours without a lost-time accident.

Creed for salesmen

● According to Ansul Chemical Co., Marinette, Wisc., here are some of the qualities looked for in a salesman:

"We think he should be well-groomed, poised and amiable.

"He should be intelligent. No genius, mind you, but a man who understands our products thoroughly. He should understand the needs and problems of the customer.

"He should be enthusiastic. You know and we know that enthusiasm flows over to the customer. He's of little value to himself or us if he isn't sold on the products he's selling.

"He should respect the buyer's intelligence and the intelligence of other salesmen. You can't kill off competitors' products by pooh-poohing them. We wouldn't do this if we could. Competition is good for us.

"He should have system to his work. He should keep accurate records of his customers and prospects. And he should plan his calls systematically.

"He should be adjustable, adaptable, call it what you will. In other words, he should be able to meet any man on that man's plane.

"We want him to act on his own initiative, think for himself. We don't want him running back to us for continual instruction. We've put our confidence in him.

"He should be helpful. He never knows when a man is going to change his mind. So he should be as helpful to his lost causes as he is to his best customers.

"He should be honest. Of course we don't hire men who steal. But we don't want a thief of integrity either. We want him to tell his customer just what our products can do and just what they can't do.

"He should be interested in many subjects. Not that we want a know-it-all. But we do like a man who's curious about life, who hasn't stopped learning merely because he's left school."

—*Printers' Ink.*

Service

● "Good morning, madam. I'm from the gas company. I understand there's something in the house that won't work."

"Yes, he's upstairs."—*Powercrax.*

Economics of changeover—

(Continued from page 9)

pipeline suppliers, particularly in the Appalachian and northeastern states, may not be able to furnish all the natural gas desired by local distributing companies is serving as a further deterrent. Some of the companies, which had followed the practice of peak-shaving with interruptible and off-peak sales of valley gas, are now convinced that storage of valley gas for use on the peaks would be a more satisfactory solution of the problem.

Adequate revenues and properly balanced rate structures represent two avenues for assuring a long-term healthy financial status for gas companies. Another approach consists of analyzing the load characteristics of various classes of customers and various combinations of gas-using appliances in order to minimize the operating and investment costs incurred in rendering adequate service to all consumers. How to undertake such studies and the value to be derived from them was the subject matter of the third panel.

Emphasis was placed upon the need for further detailed knowledge within the gas industry concerning the daily and hourly diversities existing between groups of customers with the same appliances, groups of the same class of customers with different appliances and different classes of customers. Use of currently available degree days relationships and material published by the A. G. A., particularly by its Post-War Planning Committee[1], can help solve many problems of individual utilities concerning the selection of proper peak-shaving equipment. However, problems of meeting hourly peaks, such as economic distribution system design, still make individual company load characteristic studies desirable. At present, three companies are known to have done most of the work in this field. There is urgent need for more work of this nature by other gas utilities. The available data are too scattered to justify drawing generalizations which can be safely applied to other localities; gas consumer habits may vary considerably in what might be assumed to be reasonably homogeneous service areas.

There is, for example, some present evidence that the temperature load relationships vary significantly for several utilities within the Philadelphia—New Jersey—Brooklyn—Manhattan perimeter. Much of the early impetus for such load characteristic studies developed from the rate engineering departments, but the companies which have done most of this work to date have found that the usefulness of the data for system design and conversion has far exceeded their original function. Such studies are not cheap but the knowledge obtained from them can save many times their cost by avoiding otherwise wasteful expenditures. Load studies are a job for individual companies. However, a centralized agency such as A. G. A. might well correlate data as more companies undertake such work. Such correlation would make it possible to determine the possible existence of common factors and to increase the respective company's confidence in the validity of its own data. The extent to which load studies made prior to conversion, can be utilized under post-conversion conditions is still uncertain. One of the companies which had done much work in the field expects soon to undertake new tests to study this facet as it applies to its area.

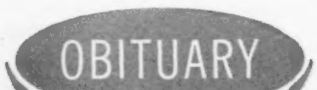
It was unanimously agreed that the introduction of mixed or natural gas into areas previously supplied with manufactured gas inevitably leads to an accelerated rate of customer growth and simultaneously an increased average consumption per customer. Market surveys, as distinct from load studies, can and have helped many companies to evaluate the immediate potentialities as a result of conversion as well as the continuing long-term prospects. Thus much valuable current information concerning residential gas appliance saturation can be obtained at little additional cost from the appliance conversion records. Once having been collated, it subsequently can be kept up-to-date by sample surveys or periodic checks by regular company employees. Analysis of major commercial or industrial market potentials, on the other hand, do not generally lend themselves to sampling techniques but require individual contacts of each present or prospective account, usually by sales department personnel.

Such market analyses have many facets and can serve many useful purposes. Among conference participants there was considerable recognition that the gas industry as a whole might well profit from the experiences of some other leading industries which have done considerable work in this field.

A knowledge of present appliance saturations by area, type of structure, age of appliance and general income levels of consumers, is invaluable to an analysis of possible system load growth. This information is necessary for intelligent planning of any possible rate revisions and the development of sound promotional, appliance merchandising and dealer cooperation programs. Such studies also may indicate in what fields the company is subject to most active competition from other fuels. Facts concerning current and prospective building developments are necessary for proper system and local distribution construction planning. Consumer opinion surveys are helpful for planning promotional, community and public relations activities by the companies. Similarly, large commercial and industrial market surveys may unearth vast potentials for firm or interruptible business, particularly for the manufactured gas companies on the threshold of conversion. These potentials might very well be so great that here again the market survey may be a necessary preliminary to the development of proper pricing policies to prevent the individual company from obtaining a volume of industrial business in excess of its available gas supply.

It was recognized that some of the eastern manufactured gas companies which have converted recently or will shortly convert to mixed or natural gas have experienced inadequate earnings during most of the postwar period. Basic policy questions which management must answer in this instance are: Shall consumers be offered a substantial rate re-

[1] See "Factors Relating to Economics of Gas House Heating Study;" Hall M. Henry, October 1945.



Morris Tracy

the senior assistant controller of Niagara Mohawk Power Corp., died suddenly at McMinnville, Ore., May 20. At the time, he was on a motor trip through the West.

Mr. Tracy had been associated with Niagara Mohawk and its predecessor companies since 1934. Prior to that, and following his graduation from Cornell University in 1909, he had been variously connected with William T. Morris, Penn Yan, the Empire Gas & Electric Co., Geneva, and the Associated Gas & Electric Co., Ithaca. He was a member of the Managing Committee of the A. G. A. Accounting Section.

duction upon introduction of natural gas in the expectation that increased sales will gradually improve the financial return? Or shall they be offered only a modest rate reduction—or none at all—until the company's financial status has been improved? The question involves not only the rate blocks which are to be affected but also the aggregate earnings in the immediate and long-range future. Both policies had their adherents among the several companies which had converted during the last few years, and there was some divergence of opinion as to which constitutes the most appropriate approach.

N. Y. - N. J. sales conference

(Continued from page 34)

raised by competitors in areas about to receive natural gas is not too important in the minds of the public. Ample information on natural gas reserves is available at A. G. A. headquarters and at the Federal Power Commission for replying to such inquiries. The problem is largely a matter of transmission and distribution capacities, rather than reserves.

Another problem discussed was that of inferior appliances, particularly conversion burners, on lines where natural gas comes in. It was agreed that this problem had lessened as fly-by-night manufacturers went out of business. The panel agreed that A. G. A. Approval Standards had been helpful and that utilities must exercise control in communities where no codes exist for inferior installations.

It was pointed out that it will be impossible to provide enough natural gas for all househeating demands for the entire nation. Gas utilities must sell only what can be supplied. Natural gas is no panacea for the gas utility company; it still requires extensive selling, unless rates are reduced and the househeating potential is large. Natural gas can be sold as a premium fuel in competition with fuel oil and coal for house heating, the panel agreed, but this requires effort.

C. T. Burg, vice-president, Iron Fireman Manufacturing Co., illustrated some of the basic points of sales training by means of superior showmanship. He declared that salesmanship is not dead; salesmen have built this nation to its great position of leadership by making possible the tremendous industrial production this country enjoys. The three bogeymen that most frequently threaten salesmen are Inertia, Pessimism and Delay, he declared. By knocking down these three, the road to successful selling can be cleared.

Robert N. Laux, Kings County Lighting Co., was elected chairman of the New York-New Jersey Council for the coming year. Hugh L. Walthen, South Jersey Gas Co., Atlantic City, was named vice-chairman and John B. Frost, The Brooklyn Union Gas Co., and Jay C. Shear, Rockland Gas Co., Spring Valley, N. Y., were elected council members.

Self-help key to citizenship

● Every individual, who promotes positively by word or deed or negatively by indifference or inaction the theory that the individual should get from government everything possible and give nothing avoidable, betrays obligations fundamental to citizenship.

Those who default in the exercise of their duty to vote at all elections and on all issues; those who neglect to seek a clear and comprehensive understanding of those issues; those who fail to insist that officials of government treat public office as a public trust, and those whose positions on all such issues are determined solely on the basis of narrow, selfish, personal interest do not deserve good government.

If they should happen to enjoy it, their good fortune is purely accidental. If their government is weak and ineffectual, evil and arbitrary, or oppressive and confiscatory, that is their just reward.

Honor, justice and righteousness do not long exist in the government of people who are themselves indifferent, disloyal, dishonest and greedy. If we find evidence of weakness in our government—either in the material order or in things spiritual—each of us should evaluate objectively his own responsibility for that condition.

If we do so with honesty and determination and with a modicum of wisdom, we will find ways and means of improving our contribution to make government what it should be. We can and we should do something positive to insure that government of the people and for the people is truly government by the people.

Unless we stand for something, our places will be taken by those who do. If those who believe in our country—in its history and in its institutions—do not serve it well, then those who have no such faith will move in and take over—*John F. O'Connel, chairman, New York State Liquor Authority.*

Manufacturers announce personnel changes

● **Rockwell Manufacturing Company**—C. K. Hubbard has been elected a vice-president. He will head up the national accounts division, whose activities are directed by the sales department. The purpose of this step is to tie in the efforts of the various district offices around the country and point up any deficiencies in sales coverage. He was formerly assistant to the vice-president of sales.

Robert A. Johnson has been named assistant sales manager of LP-gas products for Rockwell Manufacturing Company. He joined Rockwell in 1939. Prior to his new appointment he was assigned to the Atlanta district office as sales engineer. He is a member of the Liquefied Petroleum Gas Association.

Orville Cochran has been appointed supervisor of gas products and Nordstrom valves in the Rocky Mountain area. He has been affiliated with Rockwell for over twenty-five years.

● **Bastian-Morley Co., Inc., La Porte, Indiana**—Harry J. Rose has been named general manager. He will retain his present post as treasurer, in addition to his new office. In his new capacity, Mr. Rose will be in full charge of both water heater and gas fired boiler operations, as well as defense production activities.

Mr. Rose has been with Bastian-Morley for sixteen years. In 1940 he was appointed assistant treasurer and was elected treasurer of the company in 1945.

Ames joins Drake & Townsend

HAROLD AMES has become associated with Drake & Townsend, Inc., New York. He will continue to reside in Centralia, Illinois, and will have charge of propane plant installations for the firm in the Middle West. During the past eight years Mr. Ames has been specializing in the installation of LP-gas plants.

William M. Leonard retires

WILLIAM M. LEONARD, treasurer of Kings County Lighting Co., Brooklyn, N. Y., has retired after 32 years of active service with the company. After joining the company in 1919, Mr. Leonard was elected assistant treasurer in 1939 and became treasurer in 1939. He is a member of A.G.A.

New A.G.A. members

Service company

Drake & Townsend, Inc., New York, N. Y. (H. W. Townsend, pres.)

Manufacturer companies

Killam Gas Burner Co., Denver, Colo. (P. W. Dexheimer, pres.)

Radiant-Aire Corporation, Michigan City, Ind. (Walter F. Shaughnessy, pres.)

Reilley Tar and Chemical Corp., New York, N. Y. (N. W. Locke, sales engr.)

Therm-O-Disc, Inc., Mansfield, Ohio (J. H. Germany, vice pres.)

Trubake Gas Oven Co., Inc., New York, N. Y. (Robert H. Staniford, Jr., pres.)

Individual members

C. M. Ambrose, Liquefied Gas Corp., Seattle, Wash.

J. A. Benning, Haskins & Sells, Minneapolis, Minn.

Curtis H. Cadenhead, Haskins and Sells, Dallas, Texas

C. G. Campbell, Transcontinental Gas Pipe Line Corp., Houston, Texas

William R. Carmichael, Montreal Coke & Mfg. Co., Montreal, Que., Canada

Stanley L. Chapin, Public Service Electric & Gas Co., Newark, N. J.

Lionel R. Cole, Sao Paulo Tramway Lt. & Power Co., Sao Paulo, Brazil

Robert L. Copeland, Portsmouth Gas Co., Portsmouth, Va.

William L. Daniell, Wisconsin Public Service Corp., Green Bay, Wis.

H. Ashlin Dykes, Haskins & Sells, Atlanta, Ga.

Bernard B. Ferguson, Jr., Portsmouth Gas Co., Portsmouth, Va.

Charles W. Fowler, Michigan Consolidated Gas Co., Detroit, Mich.

Clarence C. Gardner, Pacific Gas & Electric Co., Hayward, Calif.

Thomas A. Hartley, General American Transportation Corp., New York, N. Y.

William E. Hood, Carrier Corp., Syracuse, N. Y.

Ralph L. Horst, Jr., Aluminum Company of America, New Kensington, Pa.

C. M. Huff, Gas Consumers Service, Baltimore, Md.

B. E. Jaggers, Arkansas-Missouri Power Co., Blytheville, Ark.

Kay Jackson Jennell, Haskins & Sells, Charlotte, N. C.

William O. Johnson, Pacific Gas and Electric Co., Berkeley, Calif.

J. C. Kaltschnee, Gas Consumers Service, St. Louis, Mo.

John F. Kane, Jr., Washington Gas Light Co., Hyattsville, Md.

C. R. Krahmer, Gas Consumers Service, Long Island City, N. Y.

L. J. Kraus, Home Gas Co., Tacoma, Washington

G. E. LaCoste, Gas Consumers Service, Boston, Mass.

J. F. Lally, Gas Consumers Service, Philadelphia, Pa.

R. C. Lanka, Haskins & Sells, San Francisco, Calif.

Willard O. Lape, Texas Gas Transmission Corp., Owensboro, Ky.

Porter M. Larson, Haskins & Sells, Tulsa, Okla.

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Partners

(Continued from page 6)

conditions, to contract sales power and reduce promotional efforts. Nothing would put a more effective mortgage on the gas industry's future than to recede from the firing line at this time. Millions of antiquated gas ranges and thousands of competitive sales stories will not for a moment cease their firing at our position. Old ranges must be replaced by modern ones. Competitive stories must be met with the truth about our product. Manufacturers and utilities must move forward with resolve, plans and programs.

In November 1944 the Executive Board of American Gas Association recommended to its members the following 11-point code covering dealer relations and merchandising policies. Each utility of course determined for itself which of these recommendations it would follow:

(1) That national, regional and state gas associations should cooperate with all similar national organizations in all allied fields.

(2) That gas utilities should perform the task of promoting the sale of new and improved gas appliances to the point of assured customer acceptance.

(3) That as customer acceptance materializes, the activities of the gas utility should be continued in such a manner as to maintain continuing acceptance of gas service and to increase the flow of gas appliance sales through normal channels of distribution.

(4) That the gas utility should assume responsibility for gas appliance sales training of personnel, (utility and dealer alike) utilizing the cooperation of gas appliance manufacturers.

(5) That the gas utility should assume responsibility for training dealers in installation and service techniques, utilizing the cooperation of gas appliance manufacturers.

(6) That the gas utility should keep dealers informed as to the increased merchandising opportunities offered to them in the gas appliance field, e.g., additional lines, new products, new rates, etc.

(7) That the gas utility should inform all concerned with home construction and financing on all matters having to do with gas equipment and gas service.

(8) That the gas utility should provide or make available to dealers facilities for financing gas appliance installment sales as attractive and advantageous as the utility's own.

(9) That the gas utility should initiate and promote appliance sales campaigns with cooperating gas appliance dealers.

(10) That home service and all other aids maintained by the gas utility should be made available to cooperating gas appliance dealers.

(11) That the gas utility should provide full information as to its policies and practices so as to establish a relationship of mutual understanding and confidence with the dealers.

That code needs to be re-examined, re-emphasized in its strength and redesigned in its weakness. Perhaps it should be reoriented to a recognition that the dealer is a very important adjunct in appliance sales, but that the prime responsibility still rests on the utility, backed by the manufacturer.

The Executive Sales Conference sponsored by A.G.A. in Chicago on September 6 and 7, 1950, gave the top officers of gas utilities and gas appliance manufacturers an opportunity to exchange views and present recommendations of far-reaching importance to the utilities and to the manufacturers. As a result of this conference the Association prepared and distributed a booklet headed: "Memo To The Chief Executive—The Road To Sales."

The GAMA board of directors, on February 22, 1951, adopted a magnificent "Public Relations and Sales Promotion Program." The employment of Carl Byoir and Associates to help guide this program was a master stroke.

Every manufacturer and utility executive even if he has read both programs, should obtain another copy of each and carefully read them again.

Why are these programs designed by the best brains of the industry? If every member of the utility business and every manufacturer would read and understand them, they will be better fitted for their jobs. All of these programs are designed for the purpose of selling good appliances to gas consumers, and for the purpose of the gas utility selling its product to the same user. Unless these objectives are accomplished, the programs will fail.

How is this story to be carried to these ultimate users? There are many ways of doing this. The principal one, however, is the personal contact made by each salesmen—the distributor salesmen, the dealer salesmen and the utility salesmen—with the purchaser of appliances and of gas.

The only way this can be done is by proper education of door-bell-ringing salesmen. The marvelous sales of Electrolux vacuum cleaners and Fuller brushes are accomplished by door-bell-ringing salesmen. It is the door-bell-ringing of a manufacturer's sales organization, by their continuous calling upon utilities, distributors and dealers, that produces his sales; nothing less than this will produce sales for utilities.

We shall continue to grow in proportion as we continue to work together.

Research in news

(Continued from page 23)

all contemporary elements in existence at this time may be operated at temperatures up to 600° F only in order to avoid oxidation and corrosion of the brass and copper parts at higher temperatures. The hot junction of presently designed elements may be operated at temperatures up to 1,600° F without apparent damage.

The study also included corrosion factors associated with utilization of gases containing seven grains of sulfur per 100 cubic feet of gas. It was found that as long as the temperature recommendations of manufacturers were not exceeded, satisfactory performance resulted over a period of seven months.

Experimental work on the project was conducted by B. L. Anderson, D. A. Biddle, and A. A. Kampman of the Laboratories staff. E. J. Weber and L. J. Kane are the authors of the bulletin which may be obtained from the Laboratories for $1.00 a copy.

Promote Spanish Trade

THE INCREASED SPANISH-SPEAKING population of the Phoenix, Arizona, area has been profitably recognized by the Central Arizona Light and Power Company. Instructions in baking, based upon the American Gas Association home service Gas Range Cookery Chart, have been issued in Spanish. In view of the postwar influx of foreign-speaking populations, such translations may be load boosters for gas companies in many parts of the United States. Similarly, appliance manufacturers may capitalize on the improved economic status of neighboring Spanish-speaking countries, through furnishing such instructions with their equipment.

CONVENTION CALENDAR

1951

AUGUST

16-17 •S.G.A. Home Service Workshop, Sales Section regional conference, New Orleans, La.

SEPTEMBER

4-6 •Pacific Coast Gas Association Convention, Fairmont Hotel, San Francisco, Calif.

7 •New Jersey Gas Association, annual meeting, Monmouth Hotel, Spring Lake, N. J.

7-8 •Maryland Utilities Association, fall conference, Cavalier Hotel, Virginia Beach, Virginia.

13-14 •Mid-West Gas Association, school and conference, Iowa State College, Ames, Iowa.

17-18 •Gas Industry Safety Conference, A. G. A. Accident Prevention Committee, Hotel Phillips, Kansas City, Mo.

21 •Oklahoma Utilities Association, Gas Division, Biltmore Hotel, Oklahoma City, Okla.

OCTOBER

8-9 •Texas Mid-Continent Oil & Gas Association, annual meeting, Beaumont, Texas.

9-12 •American Dietetic Convention and Show, Cleveland auditorium, Cleveland, Ohio (A.G.A. will exhibit)

15-17 •A. G. A. annual convention, St. Louis, Mo.

15-19 •National Metal Congress and Exposition, Detroit, Mich. (A. G. A. will exhibit).

18 •Institute of Gas Technology, annual meeting, Chicago, Ill.

22-24 •American Standards Association, annual meeting, Waldorf Astoria, New York, N. Y.

NOVEMBER

8-9 •Mid-Southeastern Gas Association, The Sir Walter Hotel, Raleigh, N. C.

13-16 •A. G. A. Operating Section, organization meetings, Hotel New Yorker, New York, N. Y.

14-16 •Wisconsin Utilities Association, combination technical and sales convention, Gas and Electric Sections, Schroeder Hotel, Milwaukee, Wis.

DECEMBER

3-5 •Institute of Cooking and Heating Appliance Manufacturers, semi-annual meeting, Cincinnati, Ohio.

1952

MARCH

27-28 •Oklahoma Utilities Association, Biltmore Hotel, Oklahoma City, Okla.

27-28 •New England Gas Association, Hotel Statler, Boston, Mass.

31-Apr. 2 •Mid-West Gas Association, annual meeting, Hotel Radisson, Minneapolis, Minn.

Personnel service

SERVICES OFFERED

Accountant—Natural Gas Pipe Line. Fourteen years' oil pipe line accounting. Clerk to Assistant Treasurer and Director. Knowledge office systems, procedures and operating expense in particular. **1672.**

Sales and **Engineering Management**—Twenty years of engineering and administrative experience with well-known firms; demonstrated ability to organize and manage. Practical knowledge of all phases of industrial and commercial gas usage. Present position sales manager. Married. (46). **1674.**

Desires to be located in the mid-west or central states. **Managerial** responsibility of gas property 2000 to 3000 meters. **Technical** training and 14 years' distribution and utilization experience. Married. (38). **1675.**

Production Engineer—B.S. in Chemical Engineering. Experienced in: plant management; construction of LP-air and oil-gas installations; and operation of LP-air and water gas plants. Presently employed. **1676.**

Process and **Production Engineer**—Eleven years' experience in manufacture of coal gas, blue water and carburetted water gas, oil gas and by-products: coke, tar, benzole. Positions held: control and superintending of production and all operations, plant maintenance, development and research engineering. Chem. Engr. Married. (40). **1677.**

Manager of natural gas utility 8000-10,000 meters. Fifteen years' experience in gas company management. Presently employed by large utility service organization. Married. (38) **1678.**

Manager or **General Superintendent,** 25 years' experience plant and distribution operation and maintenance. A few of these years spent as Manager. Would also consider Assistant Manager of fairly large property. Resume of experience on request. Interviews can be arranged. Available on thirty days notice. Eastern or Middle West location preferred. **1679.**

POSITIONS OPEN

Superintendent to head **Production, Distribution,** and **Service** Departments for small utility on eastern seaboard. Five years' broad experience desirable. Send full information in first reply, including education, experience, salary requirements, availability, and references. Strictest confidence. **0611.**

General Operating Superintendent to supervise all operation, maintenance and service work of 8500 meter middle western natural gas utility. Should have had at least 10 years' experience in customer service work. Prefer engineering background, but not essential. Excellent working conditions. Please furnish complete details past experience, educational background, salary expected, references. **0612.**

Large natural gas transmission company requires services of man experienced in **Rate** and **Cost analysis** in its Rate Department. Salary commensurate with ability. Reply in detail, stating age, education, past experience, references, salary requirements. Replies held confidential. **0613.**

Mechanical Designer—A large Midwestern utility has available a permanent position offering excellent opportunity for development. Many employee benefits, including liberal pension, sickness benefit, and annual vacation plans; excellent personnel policies. Prefer man thirty to forty years old with experience in utility, steel mill, or other large scale operations on plant layout, equipment installation, and reinforced concrete and steel structures. Your reply in full detail will be treated confidentially. **0614.**

Assistant General Manager for middle west gas utility serving city over 250,000. Age 40 to 45, with 10 years' or more utility experience, preferably in gas operations. Technical degree preferred but not essential. Must be able to assume top management duties, including administration, public relations, and supervision of all phases of gas operations. Attractive salary commensurate with abilities and responsibilities. **0615.**

Engineers wanted by well established Gas Heating Appliances Manufacturer. Must be experienced in design, laboratory testing, and A. G. A. requirements. When writing give full particulars of training and experience. **0616.**

Natural Gas Company located in northwest has opening for recent graduate in natural gas or petroleum engineering for **general engineering work** in gas utility. Prefer individual with two or three years experience but will consider recent graduate. Replies confidential. **0617.**

Natural Gas Pipe Line Company located in northwest has opening for **gas measurement engineer** or **accountant,** age under forty, for general supervision of gas measurement and accounting for pipe line system. Replies confidential. **0618.**

Assistant Chief Gas Engineer—Established and expanding gas and electric utility company located in Wisconsin needs an experienced gas engineer to be functionally responsible for maintaining and developing the company's gas and water utility facilities. This permanent position is available to a graduate engineer with approximately 10 years of varied experience in gas utility work. Please write, giving full particulars of personal background, education, experience and present salary level. All replies treated with strictest confidence. **0619.**

Sales Manager—Combination utility requires aggressive sales manager experienced in merchandising gas and electric appliances. Must have ability to plan and direct merchandising and load building at several locations throughout the country. Salary commensurate with ability. Replies held confidential. **0621.**

A progressive middlewest utility company with a rapidly growing gas business is looking for an **Assistant Chief Engineer** (professional or qualified to become registered) less than 40 years old, with 10 or more years experience in the design, construction and operation of gas supply systems. Ability to analyze gas distribution problems, organize gas operations, secure cooperation of other departments and the drive to get things done are essential. Submit an abstract of experience, qualifications, and employment history. All replies will be treated in strict confidence. All present employees of the company know of this opening. **0622.**

Gas Engineer—For consulting organization in New York. Must be graduate engineer, be up to date technically, have 5 to 10 years experience preferably with natural gas operating utility and be qualified to make economic, operating and planning analyses. Salary range in accordance with qualifications. **0623.**

Sales Manager for manufactured gas property. Experienced in gas appliance sales. Must be under 45, aggressive and have proven record of accomplishment in this field. Build and train own sales department. Salary and commission. Submit resume. **0624.**

What can a man do?

(Continued from page 14)

throughout this country to give economic opportunity to the Negro. Is your company giving economic opportunity to the Negro? There is a need to develop our productive system in all of its broad aspects in order that we may have more goods and services to establish a better standard of living. Is your company helping to expand the productive system? There is a need for companies to be good citizens and keep their neighborhoods clean, their local enterprises healthy, and their local communities modern. Does your company do this?

You can help mold the thinking of your company along these lines. I am merely saying that you must recognize that many proposals for reforming the American economy stem from real problems. If business is to hold the high place it seeks in this economy it must have a program for solving the problems. Business must be for something, not merely against things; it must be for progress and change. It must avoid a pure negative attitude; it must find solutions.

SMU cooking report

(Continued from page 12)

kitchen was equipped with gas appliances and the other with electric cooking equipment, both under the same management. This long period of investigation was sufficient to equalize operating conditions. It has also permitted the development of authentic replacement factors that can be used with confidence in establishing comparisons between gas and electric usage for comparable situations.

The study covered the entire period from September 27, 1948 to March 27, 1949 with the exception of 15 days during Christmas vacation. This long period provided an unusually good opportunity for assuring reliable data. It eliminated seasonal variations in types of cooking, differences due to variation in the way appliances were operated on any particular day, and differences due to menus which were not necessarily the same in both cafeterias on any one day. Furthermore, this study was unsupervised as far as actual cooking was concerned, the normal practices of the chefs in the respective kitchens were followed throughout without change.

The cafeterias were attached to dormitories on the campus but served both resident and non-resident students as well as faculty members. Each cafeteria served three meals a day —breakfast from 6:30 to 8:00 AM; luncheon from 11:30 AM to 1:15 PM, and dinner 5:30 to 6:30 PM. The cafeterias operated seven days a week during the school term with the exception that no evening meal was served on Sundays.

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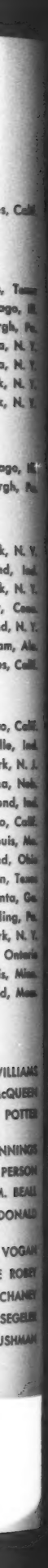
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